Implement & Tractor

The business magazine of the farm and industrial equipment industry

March 31, 1986

RED BOOK

Tractor and equipment specifications

Hydraulic components data

Nebraska test reports

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A20800----SHWEA5200 XXXXX ITN
F0000080000000 15 EC2
ANDREA SCHWARZ SRI
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4520 EAST WEST HWY
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March 31, 1986 • Vol. 101 • No. 5

The business magazine of the farm and industrial equipment industry

Implement & Tractor

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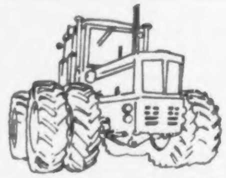

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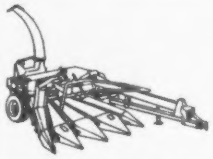

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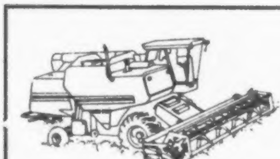

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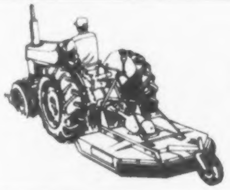

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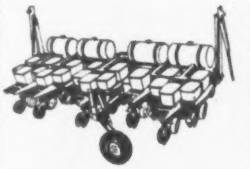

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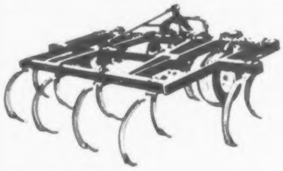

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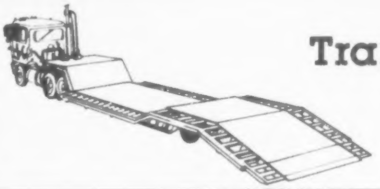

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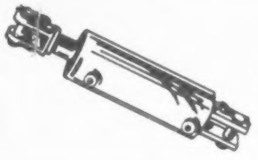

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Abbreviations:
DNA – Does not apply.
NA – Not available.
Std. – Standard.
Opt. – Optional
Linear measurements may be to nearest ¼-inch.

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IMPLEMENT & TRACTOR
Editorial, advertising and
circulation correspondence
should be addressed to:
9221 Quivira Rd.
P.O. Box 12901
Overland Park, Kan. 66212
(A suburb of Kansas City, Mo.)
Telephone (913) 888-4664
Telex: 42-4156; Answerback
Intertec OLPK

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IMPLEMENT & TRACTOR (USPS 461-750), with which is combined Farm Implement News, is published monthly except in January and March, when two issues are published, by INTERTEC PUBLISHING CORP., 9221 Quivira Rd., Overland Park, KS 66215 (a suburb of Kansas City, Mo.).

Subscription Information – Implement & Tractor is edited for persons in the farm and industrial equipment industry who function in the areas of retail sales and service, distribution sales and service, marketing, engineering, financing, manufacturing and general management. Subscription prices to qualified subscribers: U.S. one year – $12, two years – $18; elswhere including Canada, one year – $17, two years – $25. Subscription prices to all others: U.S. one year – $34, two years $68; elsewhere including Canada, one year – $39, two years $78. Single copies, $2, except Annual Statistical Number, $4; Product File issue, $5; Red Book issue, $5. Adjustment necessitated by subscription termination at single copy rate. Extra charge for service on back issues. Allow 6-8 weeks for change of address and new subscriptions.

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ISSN 0019-1953/82: $2.00 + 0.00

INTERTEC
PUBLISHING CORPORATION

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Second class postage paid at Shawnee Mission, Kan., 66201. Postmaster: Return Form 3579 to IMPLEMENT & TRACTOR, P.O. Box 12901, Overland Park, KS 66212.

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The Nebraska Tractor Test Law

Purpose of the Law – The Nebraska Tractor Test Law originated in 1919 for the purpose of verifying advertising claims on tractors offered for sale to Nebraska farmers.

Its position as the only independent test laboratory in the United States devoted to the evaluation of tractor performance proved of unique value to the industry. The Agricultural Tractor Test Code used in the Nebraska Tests was developed with the approval and assistance of the American Society of Agricultural Engineers and the Society of Automotive Engineers, and is revised and updated periodically as the need arises. The Test Code (ASAE S209.4 or SAE J708c) is published in the ASAE Yearbook and SAE Handbook.

Provisions of the Law – Stated briefly, the Nebraska Tractor Test Law provides:

That a stock unit of each agricultural tractor model sold in Nebraska shall be tested and passed upon by a board of three engineers under the supervision and direction of the University of Nebraska. Each tractor must be certified as a stock model and will be equipped with the common power consuming accessories. An official representative of the manufacturer is present during the test to see that the performance meets company standards.

The Department of Agriculture shall deny to any manufacturer the right to do business in the State on complaint of two or more bona fide customers that the company has failed to maintain an adequate service station with a full supply of replacement parts within the state and within reasonable distance of customers.

The law further states that it shall be unlawful to publish excerpts from any official test in advertising material without publishing the entire report.

The provisions of the Nebraska Test Law do not apply to any tractor the engine of which develops less than 20 horsepower; or to tractors manufactured, sold and used for heavy construction when identical units are not sold and used for agricultural purposes.

Explanation of Test Reports

General

Tractors are tested at the University of Nebraska according to the Agricultural Tractor Test Code approved by the American Society of Agricultural Engineers and the Society of Automotive Engineers or official Nebraska test procedure.

The manufacturer selects the tractor to be tested and certifies that it is a stock model. Each tractor is equipped with the common power consuming accessories such as power steering, power lift pump, generator, etc., if available. Power consuming accessories may be disconnected only when the means for disconnecting can be reached from the operating station. An official representative of the company is present during the test to see that the tractor gives its optimum performance. Additional weight may be added to the tractor as ballast if the manufacturer recommends use of such ballast. The static tire loads and the tire inflation pressures must conform to the specifications of Tire and Rim Association.

Preparation for Test

The engine crankcase is drained and refilled with new oil conforming to specifications in the operator's manual. The operator's manual is also used as the guide for selecting the proper fuel and for routine lubrication and maintenance operations.

The tractor is limbered up for a minimum of three hours on the drawbar. Preliminary adjustment of the tractor is permitted at this time. Any parts added or replaced during the limber-up run, or any subsequent runs, are mentioned in the individual test reports. The tractor is equipped with approximately the amount of added ballast that is to be used during the drawbar runs.

PTO Performance

Power take-off performance runs are made by connecting the power take-off to a dynamometer. During a preliminary power take-off run the manufacturer's representative may make adjustment for the fuel, ignition or injection timing and governor control settings. These settings must be maintained for the remainder of the test. The manually operated governor control mechanism is set to provide the high-idle speed specified by the manufacturer. During the power take-off runs an ambient air temperature of approximately 75°F. (24.0°C) is maintained.

Maximum power is obtained at the rated engine speed specified by the manufacturer with the governor control lever set for maximum power. This same setting is used for all subsequent PTO runs. Time of the run is two hours. Whenever the power take-off speed during the maximum power run differs from the speeds set forth in the ASAE and SAE standards, an additional run is made at either 540 or 1000 rpm of the power take-off shaft. Time of this run is one hour.

Drawbar Performance

Maximum drawbar power is shown for the normal field speed selected by the manufacturer. All engine adjustments are the same as those used in the power take-off runs. If the manufacturer specifies a different rated engine speed for drawbar operations, then the position of the manually operated governor control is changed to provide the high-idle speed specified.

Maximum drawbar power is determined within the following limits: (1) slip of the drivers must not exceed 15% for pneumatic tires on the concrete test course or 7% for steel cleats on the well packed earthen test course, (2) ground speeds must not exceed 10 miles per hour, (3) safe stability limits of the tractor must not be exceeded, (4) no other operating limit of the tractor must be exceeded. Drawbar load is applied until the manufacturer's rated engine speed is obtained with maximum governor control lever setting. Travel speed, drawbar pull and other data are recorded over two 500-foot straight level areas.

Fuel consumption is determined at the manufacturer's selected travel speed with the drawbar pull set: (1) to give rated engine rpm, (2) 75% of the pull at rated engine rpm, (3) 50% of the pull at rated engine rpm, and (4) maintaining the same load and travel speed as in (3) by shifting to a higher gear and reducing the engine rpm.

This summary shows the drawbar horsepower, corresponding travel speed and fuel consumption at 100%, 75% or 50% loads, and 50% of pull at reduced engine speed.

Also shown is the maximum drawbar horsepower produced for two 500-foot travel sections and corresponding travel speed, the maximum drawbar pull and the corresponding drive-wheel slippage.

In addition, the "lugging ability" obtained by increasing the load so that the full throttle engine speed drops to 80% of rated is given as a percent increase with respect to the pull at rated engine rpm.

The maximum drawbar horsepower and the corresponding speed and drawbar pull for other selected gears or travel speeds are shown in the individual test reports.

Three-point Hitch Test

The hitch testing procedure is based primarily on standard procedures (ASAE 349.1 and SAE J283) adopted by ASAE and the Society of Automotive Engineers, plus ASAE and SAE standards for tractor 3-point hitch and quick coupler dimensions and operation. ISO (International Standards Organization) standard 7414-1982 (E), "Agricultural Equipment – Matching of Wheeled Tractors and Rear Mounted Implements – Code Numbering System," has also had a role in the test development.

According to the procedure adopted by the Board of Test Engineers July 29, 1983, "The Three Point Hydraulic Lift test will apply to all tractors brought for testing to the Nebraska Tractor Test Laboratory which have the three-point lift attachment as standard equipment or as an option." Those procedures also specify that distribution and total tractor weight will be in accordance with limits set by the tractor manufacturer, tire manufacturer and ROPS certification, and weight shall include full fuel tanks and a 175-lb. operator. Front end ballast can only be provided by a standard weight package and/or front tire ballast supplied or recommended by the manufacturer.

The tractor is tested on the same rear tires used during drawbar track tests, and front tires of 2WD or FWA tractors may be of any size or ply offered by the tractor manufacturer as long as they properly match rear tires. A quick attaching coupler is used on all Category III and IV hitches and on any other tractors on which it is offered as standard equipment. But, the quick coupler is *not* considered part of the load lifted by the hitch.

Measurements taken include engine temperature, crankshaft rpm, hydraulic oil pressure and temperature, vertical displacement of lower link implement attaching points, lift time, vertical movement of the applied load, plus any other variables necessary to describe system performance.

Sound Measurement

Sound is recorded during each of the Drawbar Performance runs as the tractor travels on a straight section of the test course. The dB(A) sound level is obtained with the microphone located near the right ear of the operator. Bystander sound readings are taken with the microphone placed 25 feet (7.5 m) from the line of travel of the tractor. An increase of 10dB(A) will approximately double the loudness to the human ear.

Individual copies of any test report, annual summary booklets or annual subscription (at $5.00 for U.S. & Canada, $8.00 for foreign) are available. For complete information write to **Nebraska Tractor Test Laboratory, Department of Agricultural Engineering, The University of Nebraska – Lincoln, Institute of Agriculture and Natural Resources, Lincoln, NE 68583-0832.**

NEBRASKA TRACTOR TEST 1545—ALLIS-CHALMERS 6070 DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed—688 rpm)									
	70.78 (52.78)	2300	4.373 (16.553)	0.431 (0.262)	16.18 (3.189)	187 (85.8)	63 (17.2)	75 (23.8)	29.25 (98.78)
Standard Power Take-off Speed (540 rpm) — One Hour									
	71.01 (52.95)	2220	4.415 (16.714)	0.424 (0.258)	16.45 (3.242)	187 (86.0)	65 (18.3)	76 (24.2)	29.25 (98.77)
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	63.22 (47.14)	2417	4.142 (15.679)	0.457 (0.278)	15.26 (3.007)	184 (84.4)	66 (18.6)	75 (23.9)	— —
	0.00 (0.00)	2560	1.461 (5.530)	— —	— —	176 (80.0)	67 (19.2)	77 (24.7)	— —
	32.63 (24.33)	2494	2.795 (10.572)	0.598 (0.364)	11.68 (2.302)	181 (82.8)	66 (18.9)	75 (23.6)	— —
	70.48 (52.55)	2300	4.355 (16.476)	0.431 (0.262)	16.19 (3.190)	188 (86.4)	67 (19.2)	77 (25.0)	— —
	16.54 (12.34)	2531	2.135 (8.083)	0.901 (0.548)	7.75 (1.526)	178 (81.1)	65 (18.1)	73 (22.8)	— —
	48.12 (35.88)	2456	3.446 (13.044)	0.500 (0.304)	13.96 (2.751)	183 (83.9)	68 (20.0)	76 (24.4)	— —
Av Av	38.50 (28.71)	2461	3.054 (11.560)	0.554 (0.337)	12.60 (2.482)	182 (83.2)	66 (19.0)	75 (24.2)	29.23 (98.99)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th (3L) Gear											
58.35 (43.51)	5081 (22.60)	4.31 (6.93)	2300	8.00	4.361 (16.509)	0.522 (0.317)	13.38 (2.636)	186 (85.3)	44 (6.7)	54 (12.2)	29.06 (98.13)
75% of Pull at Maximum Power — Ten Hours 7th (3L) Gear											
47.08 (35.36)	3836 (17.06)	4.66 (7.50)	2435	5.91	3.877 (14.676)	0.568 (0.345)	12.30 (2.423)	185 (85.0)	46 (7.7)	50 (10.1)	29.04 (98.07)
50% of Pull at Maximum Power — Two Hours 7th (3L) Gear											
33.15 (24.72)	2557 (11.37)	4.86 (7.83)	2482	3.76	3.187 (12.063)	0.671 (0.408)	10.40 (2.049)	184 (84.4)	47 (8.3)	50 (10.0)	28.80 (97.51)
50% of Pull at Reduced Engine Speed - Two Hours 9th (1H) Gear											
33.23 (24.78)	2556 (11.37)	4.88 (7.85)	1410	3.58	2.378 (9.000)	0.500 (0.304)	13.98 (2.753)	185 (85.0)	54 (11.9)	60 (15.6)	28.82 (97.32)
MAXIMUM POWER IN SELECTED GEARS											
53.53 (39.91)	7987 (35.53)	2.51 (4.04)	2305	14.80	5th (1L) Gear			184 (84.4)	44 (6.7)	46 (7.8)	28.87 (97.49)
57.36 (42.77)	6495 (28.88)	3.31 (5.33)	2297	10.70	6th (2L) Gear			185 (85.0)	43 (6.1)	52 (11.1)	29.10 (98.27)
58.81 (43.86)	5114 (22.75)	4.31 (6.94)	2305	7.90	7th (3L) Gear			186 (85.6)	45 (7.2)	55 (12.8)	29.07 (98.17)
59.22 (44.16)	4034 (17.94)	5.51 (8.86)	2300	3.94	8th (4L) Gear			186 (85.3)	44 (6.7)	54 (12.2)	29.08 (98.20)
59.56 (44.42)	2810 (12.50)	7.90 (12.71)	2297	4.10	9th (1H) Gear			186 (85.3)	43 (6.1)	53 (11.7)	29.09 (98.23)

Department of Agricultural Engineering

Dates of Test: October 19 to 26, 1984

Manufacturer: ALLIS CHALMERS CORPORATION, P.O. Box 512, Milwaukee, Wisconsin 53201

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8385 **Fuel weight** 6.982 lbs/gal *(0.837 kg/l)* **Oil SAE** 15W-40 **API service classification** SF-CD **To motor** 2.678 gal *(10.139 l)* **Drained from motor** 2.502 gal *(9.470 l)* **Transmission and final drive lubricant** Allis Chalmers Power Fluid 821 **Total time engine was operated** 52.0 hours.

ENGINE: Make Allis Chalmers Diesel **Type** four cylinder vertical with turbocharger **Serial No.** 55K20023 **Crankshaft** lengthwise **Rated rpm** 2300 **Bore and stroke** 3.875" × 4.25" *(98.4 mm × 107.9 mm)* **Compression ratio** 15.1 to 1 **Displacement** 200 cu in *(3285 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element and centrifugal precleaner **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard **Serial No.** 6070 1004 **Tread width** rear 57.4" *(1460 mm)* to 80.0" *(2030 mm)* front 56" *(1422 mm)* to 79" *(2006 mm)* **Wheel base** 92.6" *(2352 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 28.3" *(719 mm)* Vertical distance above roadway 36.4" *(925 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 1.0 *(1.6)* second 1.3 *(2.1)* third 1.6 *(2.6)* fourth 2.0 *(3.3)* fifth 2.9 *(4.7)* sixth 3.8 *(6.1)* seventh 4.7 *(7.6)* eighth 5.9 *(9.5)* ninth 8.5 *(13.6)* tenth 11.0 *(17.7)* eleventh 13.8 *(22.2)* twelfth 17.2 *(27.7)* reverse 0.9 *(1.5)*, 2.7 *(4.4)*, 8.0 *(12.8)* **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 124.8" *(3.17 m)* left 122.8" *(3.12 m)* (on concrete surface without brake) right 141.0" *(3.58 m)* left 144.0" *(3.66 m)* **Turning space diameter** (on concrete surface with brake applied) right 266.8" *(6.78 m)* left 263.0" *(6.68 m)* (on concrete surface without brake) right 299.5" *(7.61 m)* left 305.5" *(7.76 m)* **Power take-off** 540 rpm at 2228 engine rpm **Unladen tractor mass** 7285 lb *(3304 kg)*.

LUGGING ABILITY IN 7th (3L) GEAR

Crankshaft Speed rpm	2303	2075	1841	1613	1378	1155
Pull—lbs (kN)	5114 (22.75)	5668 (25.21)	5995 (26.67)	6094 (27.11)	6324 (28.13)	5817 (25.88)
Increase in Pull %	0	11	17	19	24	14
Power—Hp (kW)	58.81 (43.86)	58.00 (43.25)	54.07 (40.32)	47.96 (35.76)	42.25 (31.49)	32.91 (24.54)
Speed—Mph (km/h)	4.31 (6.94)	3.84 (6.18)	3.38 (5.44)	2.95 (4.75)	2.50 (4.03)	2.12 (3.41)
Slip %	7.90	8.04	[illegible]	9.91	10.52	9.42

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	80.5
75% of Pull at Maximum Power—Ten Hours	81.5
50% of Pull at Maximum Power—Two Hours	80.5
50% of Pull at Reduced Engine Speed—Two Hours	77.5
Bystander in 12th (4H) gear	85.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 16.9-34; 6; 18 *(125)*	Two 16.9-34; 6; 18 *(125)*
Ballast	—Liquid (each)	705 lb *(318 kg)*	None
	—Cast Iron (each)	760 lb *(345 kg)*	None
Front Tires	—No. size, ply & psi (kPa)	Two 7.50-16; 6; 36 *(250)*	Two 7.50-16; 6; 36 *(250)*
Ballast	—Cast Iron (each)	None	None
		65 lb *(29 kg)*	None
Height of Drawbar		19.5 in *(495 mm)*	19.5 in *(495 mm)*
Static Weight with Operator	—Rear	8105 lb *(3676 kg)*	5100 lb *(2350 kg)*
	—Front	2410 lb *(1093 kg)*	2280 lb *(1034 kg)*
	—Total	10515 lb *(4769 kg)*	7480 lb *(3384 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2325	*16030*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	182	*83*	
Location	pump inlet		
	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	**3160	*1433*	
TIME sec	5.29		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	9.8	*248*	
Top of timed range	33.8	*857*	
Highest position	36.1	*918*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	9.1	*230*	
Top of timed range	35.9	*911*	
Highest position	39.5	*1003*	

*Implement load capacity for transport purposes not specified by manufacturer.
**The manufacturers advertised capacity is 3200 lb *(1451 kg)*.

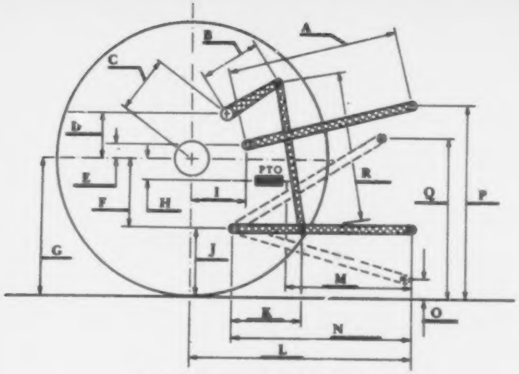
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 120°F *(53.3°C)*. Five gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. 1545, December 5, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	26.3	*667*
B	9.1	*230*
C	15.5	*393*
D	14.1	*359*
E	8.1	*206*
F	9.3	*236*
G	28.0	*712*
H	1.3	*33*
I	14.5	*367*
J	18.7	*476*
K	17.0	*431*
L	40.9	*1038*
M	21.3	*540*
N	35.6	*905*
O	8.0	*203*
P	37.8	*959*
Q	35.9	*911*
R	27.0	*686*

Allis-Chalmers 6070 Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1548—CASE 1896 POWERSHIFT DIESEL ALSO CASE INTERNATIONAL 1896 POWERSHIFT DIESEL

12 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
	MAXIMUM POWER AND FUEL CONSUMPTION								
	Rated Engine Speed — Two hours (PTO Speed—997 rpm)								
	95.92 *(71.53)*	2100	5.739 *(21.726)*	0.418 *(0.254)*	16.71 *(3.293)*	187 *(86.1)*	58 *(14.2)*	75 *(23.9)*	29.23 *(98.69)*
	VARYING POWER AND FUEL CONSUMPTION — Two Hours								
	83.83 *(62.51)*	2158	5.270 *(19.949)*	0.439 *(0.267)*	15.91 *(3.134)*	187 *(86.1)*	59 *(14.7)*	77 *(24.7)*	....
	0.00 *(0.00)*	2273	1.934 *(7.322)*	....	....	186 *(85.6)*	57 *(13.9)*	75 *(23.9)*	....
	43.05 *(32.09)*	2217	3.632 *(13.750)*	0.589 *(0.358)*	11.85 *(2.334)*	187 *(85.8)*	58 *(14.2)*	75 *(23.6)*	....
	96.69 *(72.10)*	2101	5.782 *(21.886)*	0.417 *(0.254)*	16.72 *(3.293)*	187 *(86.1)*	59 *(14.7)*	75 *(23.9)*	....
	21.79 *(16.25)*	2244	2.811 *(10.642)*	0.900 *(0.548)*	7.75 *(1.527)*	184 *(84.2)*	58 *(14.4)*	75 *(23.6)*	....
	63.78 *(47.56)*	2191	4.453 *(16.858)*	0.487 *(0.296)*	14.32 *(2.821)*	186 *(85.3)*	58 *(14.4)*	75 *(23.9)*	....
Av ***Av***	**51.52** ***(38.42)***	**2197**	**3.981** ***(15.068)***	**0.559** ***(0.340)***	**12.94** ***(2.550)***	**186** ***(85.5)***	**58** ***(14.4)***	**75** ***(23.9)***	**29.19** ***(98.57)***

DRAWBAR PERFORMANCE

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (3-2) Gear											
84.51 *(63.02)*	4914 *(21.86)*	6.45 *(10.38)*	2100	3.08	5.703 *(21.588)*	0.471 *(0.286)*	14.82 *(2.919)*	192 *(88.6)*	43 *(5.8)*	53 *(11.4)*	29.11 *(98.30)*
75% of Pull at Maximum Power — Ten Hours 8th (3-2) Gear											
66.89 *(49.88)*	3735 *(16.61)*	6.72 *(10.81)*	2168	2.24	4.902 *(18.556)*	0.511 *(0.311)*	13.65 *(2.688)*	189 *(87.1)*	43 *(6.2)*	55 *(12.8)*	28.94 *(97.73)*
50% of Pull at Maximum Power — Two Hours 8th (3-2) Gear											
45.83 *(34.18)*	2490 *(11.07)*	6.90 *(11.11)*	2211	1.50	4.041 *(15.296)*	0.615 *(0.374)*	11.34 *(2.235)*	189 *(87.2)*	45 *(7.2)*	58 *(14.2)*	29.09 *(98.23)*
50% of Pull at Reduced Engine Speed — Two Hours 10th (4-1) Gear											
45.77 *(34.13)*	2489 *(11.07)*	6.90 *(11.10)*	1447	1.46	3.202 *(12.123)*	0.488 *(0.297)*	14.29 *(2.815)*	185 *(85.0)*	44 *(6.7)*	55 *(12.8)*	29.07 *(98.17)*
MAXIMUM POWER IN SELECTED GEARS											
74.26 *(55.38)*	12357 *(54.97)*	2.25 *(3.63)*	2128	14.70		2nd (1-2) Gear		188 *(86.7)*	45 *(7.2)*	50 *(10.0)*	28.55 *(96.68)*
82.87 *(61.80)*	10367 *(46.11)*	3.00 *(4.82)*	2100	7.92		3rd (1-3) Gear		189 *(86.9)*	39 *(3.9)*	44 *(6.7)*	29.10 *(98.27)*
84.62 *(63.10)*	10352 *(46.05)*	3.07 *(4.93)*	2100	7.92		4th (2-1) Gear		187 *(86.1)*	39 *(3.9)*	45 *(7.2)*	29.10 *(98.27)*
85.80 *(63.98)*	7643 *(34.00)*	4.21 *(6.77)*	2100	5.53		5th (2-2) Gear		188 *(86.4)*	40 *(4.4)*	46 *(7.8)*	29.10 *(98.27)*
86.45 *(64.46)*	6790 *(30.20)*	4.77 *(7.68)*	2100	4.49		6th (3-1) Gear		187 *(86.1)*	40 *(4.4)*	47 *(8.3)*	29.11 *(98.30)*
85.41 *(63.69)*	6006 *(26.72)*	5.33 *(8.58)*	2100	3.87		7th (2-3) Gear		186 *(85.3)*	40 *(4.4)*	48 *(8.9)*	29.11 *(98.30)*
85.77 *(63.96)*	4980 *(22.15)*	6.46 *(10.39)*	2103	3.08		8th (3-2) Gear		189 *(87.2)*	41 *(5.0)*	50 *(10.0)*	29.12 *(98.33)*
83.05 *(61.93)*	3833 *(17.05)*	8.13 *(13.08)*	2100	2.52		9th (3-3) Gear		188 *(86.7)*	41 *(5.0)*	49 *(9.4)*	29.11 *(98.30)*

Department of Agricultural Engineering

Dates of Test: October 24 to November 7, 1984

Manufacturer: J.I. CASE COMPANY, 700 State Street, Racine, Wisconsin 53404

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8382 **Fuel weight** 6.979 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** CD/SF **To motor** 3.548 gal *(13.431 l)* **Drained from motor** 3.211 gal *(12.157 l)* **Transmission and final drive lubricant** Case Powergard PTF transmission fluid **Total time engine was operated** 31.5 hours.

ENGINE: Make Consolidated Diesel Corporation - Case Diesel **Type** six cylinder vertical with turbocharger **Serial No.** *44111064* **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.016" × 4.724" *(102 mm × 120 mm)* **Compression ratio** 17.5 to 1 **Displacement** 359 cu in *(5884 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard with duals **Serial No.** *9934563* **Tread width** rear 60" *(1524 mm)* to 128" *(3251 mm)* front 60" *(1524 mm)* to 88" *(2235 mm)* **Wheel base** 108" *(2743 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 27.9" *(708 mm)* Vertical distance above roadway 40.7" *(1034 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (3) range operator controlled powershift **Advertised speeds mph *(km/h)*** first 1.9 *(3.1)* second 2.5 *(4.0)* third 3.2 *(5.2)* fourth 3.2 *(5.2)* fifth 4.3 *(6.9)* sixth 4.9 *(7.9)* seventh 5.4 *(8.7)* eighth 6.5 *(10.5)* ninth 8.1 *(13.0)* tenth 9.9 *(15.9)* eleventh 13.2 *(21.2)* twelfth 18.1 *(29.1)* reverse 3.2 *(5.2)*, 5.4 *(8.7)*, 8.1 *(13.0)* **Clutch** wet multiple disc hydraulically power actuated by foot pedal **Brakes** wet multiple disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 157" *(3.99 m)* left 157" *(3.99 m)* (on concrete surface without brake) right 174" *(4.42 m)* left 174" *(4.42 m)* **Turning space diameter** (on concrete surface with brake applied) right 326" *(8.28 m)* left 326" *(8.28 m)* (on concrete

LUGGING ABILITY IN 8th (3-2) GEAR

Crankshaft Speed rpm	2103	1894	1689	1467	1264	1050
Pull—lbs *(kN)*	4980 *(22.15)*	5738 *(25.52)*	6387 *(28.41)*	6804 *(30.27)*	7275 *(32.36)*	7208 *(32.06)*
Increase in Pull %	0	15	28	37	46	45
Power—Hp *(kW)*	85.77 *(63.96)*	88.53 *(66.02)*	87.37 *(65.15)*	80.54 *(60.06)*	73.89 *(55.10)*	60.90 *(45.42)*
Speed—Mph *(km/h)*	6.46 *(10.39)*	5.79 *(9.31)*	5.13 *(8.26)*	4.44 *(7.14)*	3.81 *(6.13)*	3.17 *(5.10)*
Slip %	3.08	3.55	4.18	4.49	4.80	4.80

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	77.5
75% of Pull at Maximum Power—Ten Hours	78.0
50% of Pull at Maximum Power—Two Hours	77.5
50% of Pull at Reduced Engine Speed—Two Hours	74.0
Bystander in 12th (4-3) gear	89.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 18.4-38, 6, 16 *(110)*	Four 18.4-38, 6, 16 *(110)*
Ballast	—Liquid (each)	None	None
	—Test Equip (each)	75 lb *(35 kg)*	None
Front Tires	—No. size, ply & psi *(kPa)*	Two 11.00-16, 6, 32 *(220)*	Two 11.00-16, 6, 32 *(220)*
Ballast	—Liquid (each)	None	None
	—Test equip (each)	65 lb *(28 kg)*	None
Height of Drawbar		19.5 in *(495 mm)*	19.5 in *(495 mm)*
Static Weight with Operator	—Rear	10360 lb *(4699 kg)*	10055 lb *(4561 kg)*
	—Front	3565 lb *(1617 kg)*	3440 lb *(1560 kg)*
	—Total	13925 lb *(6316 kg)*	13495 lb *(6121 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)* Location	2250 remote	*15510*	
Hydraulic oil temperature °F *(°C)* Location	175 sump	*78*	
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH CATEGORY	no II		 *not measured
LOAD lbs *(kg)* TIME sec	6604 2.47	*2996*	
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.5	*317*	
Top of timed range	**35.5	*902*	
Highest position	36.0	*914*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.2	*284*	
Top of timed range	41.6	*1056*	
Highest position	42.5	*1080*	

*Implement load capacity for transport purposes not specified by manufacturer.
**The observed power range 23.5" *(597 mm)* does not meet the minimum power range 24" *(610 mm)* specified by ASAE Standard S217.10

surface without brake) right 362" *(9.20 m)* left 362" *(9.20 m)*. **Power take-off** 534 rpm at 2100 engine rpm and 997 rpm at 2100 engine rpm. **Unladen tractor mass** 12040 lb *(5461 kg)*.

REPAIRS AND ADJUSTMENTS: During the hydraulic lift test the control valve linkage was adjusted.

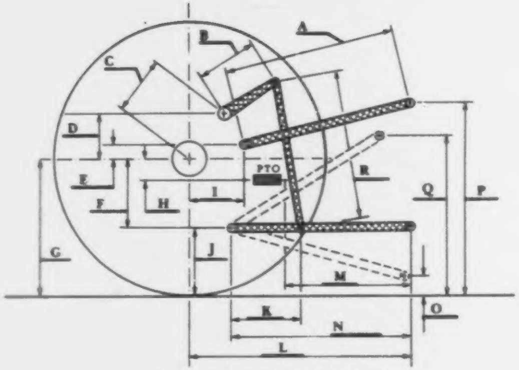
REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 125°F *51.7°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1548**, December 3, 1984.

Report reissued. Supplemental sales permit for Case International 1896 Powershift Diesel June 18, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	22.5	*572*
B	12.0	*305*
C	14.7	*372*
D	13.0	*330*
E	6.2	*157*
F	12.4	*315*
G	31.9	*810*
H	0.2	*5*
I	20.2	*512*
J	19.5	*495*
K	17.1	*434*
L	42.7	*1084*
M	20.7	*525*
N	30.2	*766*
O	8.0	*203*
P	38.5	*978*
Q	32.8	*832*
R	34.1	*867*

Case 1896 Powershift Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1549—CASE 2096 POWERSHIFT DIESEL
ALSO CASE INTERNATIONAL 2096 POWERSHIFT DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F *(°C)* Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—998 rpm)								
115.67 *(86.26)*	2100	6.657 *(25.200)*	0.402 *(0.244)*	17.38 *(3.423)*	189 *(87.0)*	58 *(14.5)*	75 *(23.9)*	28.96 *(97.78)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
101.61 *(75.77)*	2170	6.100 *(23.090)*	0.419 *(0.255)*	16.66 *(3.281)*	188 *(86.7)*	58 *(14.4)*	74 *(23.3)*	—
0.00 *(0.00)*	2260	1.870 *(7.078)*	—	—	186 *(85.6)*	57 *(13.9)*	74 *(23.3)*	—
51.73 *(38.58)*	2211	3.981 *(15.068)*	0.537 *(0.327)*	13.00 *(2.560)*	188 *(86.4)*	59 *(14.7)*	75 *(23.9)*	—
116.30 *(86.73)*	2100	6.667 *(25.238)*	0.400 *(0.243)*	17.44 *(3.436)*	187 *(86.1)*	58 *(14.4)*	75 *(23.6)*	—
26.11 *(19.47)*	2232	2.936 *(11.114)*	0.785 *(0.477)*	8.89 *(1.752)*	186 *(85.6)*	58 *(14.4)*	75 *(23.9)*	—
77.10 *(57.49)*	2197	5.055 *(19.136)*	0.458 *(0.278)*	15.25 *(3.004)*	187 *(85.8)*	58 *(14.4)*	74 *(23.3)*	—
Av 62.14 **Av *(46.34)***	**2195**	**4.435** ***(16.787)***	**0.498** ***(0.303)***	**14.01** ***(2.760)***	**187** ***(86.0)***	**58** ***(14.4)***	**74** ***(23.6)***	**28.90** ***(97.60)***

DRAWBAR PERFORMANCE

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F *(°C)* Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (3-2) Gear											
100.56 *(74.99)*	5915 *(26.31)*	6.38 *(10.26)*	2101	3.90	6.613 *(25.032)*	0.459 *(0.279)*	15.21 *(2.996)*	187 *(85.8)*	52 *(10.8)*	61 *(15.8)*	28.59 *(95.85)*
75% of Pull at Maximum Power — Ten Hours 8th (3-2) Gear											
79.68 *(59.41)*	4463 *(19.85)*	6.69 *(10.77)*	2184	2.84	5.723 *(21.663)*	0.501 *(0.305)*	13.92 *(2.743)*	189 *(87.2)*	33 *(0.4)*	41 *(4.7)*	29.18 *(98.53)*
50% of Pull at Maximum Power — Two Hours 8th (3-2) Gear											
54.18 *(40.40)*	2975 *(13.23)*	6.83 *(10.99)*	2208	1.99	4.535 *(17.167)*	0.584 *(0.355)*	11.95 *(2.353)*	189 *(87.2)*	56 *(13.1)*	57 *(13.6)*	28.71 *(96.95)*
50% of Pull at Reduced Engine Speed — Two Hours 10th (4-1) Gear											
54.23 *(40.44)*	2975 *(13.23)*	6.84 *(11.00)*	1449	1.91	3.740 *(14.157)*	0.481 *(0.293)*	14.50 *(2.857)*	186 *(85.6)*	59 *(14.7)*	59 *(15.0)*	28.68 *(96.85)*
MAXIMUM POWER IN SELECTED GEARS											
78.27 *(58.36)*	12915 *(57.45)*	2.27 *(3.66)*	2161	14.86	2nd (1-2) Gear			188 *(86.7)*	44 *(6.7)*	47 *(8.3)*	28.51 *(96.27)*
94.28 *(70.30)*	12476 *(55.49)*	2.83 *(4.56)*	2099	12.54	3rd (1-3) Gear			188 *(86.4)*	45 *(7.2)*	48 *(8.9)*	28.49 *(96.21)*
95.94 *(71.54)*	12348 *(54.93)*	2.91 *(4.69)*	2100	12.08	4th (2-1) Gear			189 *(87.2)*	46 *(7.8)*	49 *(9.4)*	28.47 *(96.14)*
100.65 *(75.05)*	9166 *(40.77)*	4.12 *(6.63)*	2100	6.77	5th (2-2) Gear			188 *(86.4)*	47 *(8.3)*	50 *(10.0)*	28.45 *(96.07)*
101.28 *(75.52)*	8103 *(36.04)*	4.69 *(7.54)*	2101	5.80	6th (3-1) Gear			190 *(87.8)*	47 *(8.3)*	51 *(10.6)*	28.44 *(96.04)*
100.10 *(74.64)*	7145 *(31.78)*	5.25 *(8.45)*	2100	4.90	7th (2-3) Gear			189 *(87.2)*	48 *(8.9)*	52 *(11.1)*	28.43 *(96.00)*
101.40 *(75.62)*	5968 *(26.54)*	6.37 *(10.25)*	2100	3.82	8th (3-2) Gear			187 *(86.1)*	52 *(11.1)*	62 *(16.7)*	28.37 *(95.80)*
98.65 *(73.57)*	4603 *(20.48)*	8.04 *(12.93)*	2100	2.95	9th (3-3) Gear			187 *(85.8)*	49 *(9.4)*	53 *(11.7)*	28.42 *(95.97)*

Department of Agricultural Engineering

Dates of Test: October 24 to November 5, 1984

Manufacturer: J.I. CASE COMPANY, 700 State Street, Racine, Wisconsin 53404

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8382 **Fuel weight** 6.979 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** CD/SF **To motor** 3.549 gal *(13.436 l)* **Drained from motor** 3.109 gal *(11.768 l)* **Transmission and final drive lubricant** Case Powergard PTF transmission fluid **Total time engine was operated** 32.5 hours.

ENGINE: Make Consolidated Diesel Corporation-Case Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 6TA-590/44114446 **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.016" × 4.724" *(102 mm × 120 mm)* **Compression ratio** 16.5 to 1 **Displacement** 359 cu in *(5884 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard with duals **Serial No.** 9935403 **Tread width** rear 60" *(1524 mm)* to 100" *(2540 mm)* front 60" *(1524 mm)* to 88" *(2235 mm)* **Wheel base** 108" *(2743 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) horizontal distance forward from centerline of rear wheels 27.1" *(688 mm)* Vertical distance above roadway 40.7" *(1034 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (3) range operator controlled powershift **Advertised speeds mph *(km/h)*** first 1.9 *(3.1)* second 2.5 *(4.0)* third 3.2 *(5.2)* fourth 3.2 *(5.2)* fifth 4.3 *(6.9)* sixth 4.9 *(7.9)* seventh 5.4 *(8.7)* eighth 6.5 *(10.5)* ninth 8.1 *(13.0)* tenth 9.9 *(15.9)* eleventh 13.2 *(21.2)* twelfth 18.1 *(29.1)* reverse 3.2 *(5.2)*, 5.4 *(8.7)*, 8.1 *(13.0)* **Clutch** wet multiple disc hydraulically power actuated by foot pedal **Brakes** wet multiple disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 157" *(3.99 m)* left 157" *(3.99 m)* (on concrete surface without brake) right 174" *(4.42 m)* left 174" *(4.42 m)* **Turning space diameter** (on concrete surface with brake applied) right 326" *(8.28 m)* left 326" *(8.28 m)* (on concrete surface without brake) right 362" *(9.20 m)* left 362" *(9.20 m)* **Power take-off** 534 rpm at 2100 engine rpm and 998 rpm at 2100 engine rpm **Unladen tractor mass** 12155 lb *(5514 kg)*.

LUGGING ABILITY IN 8th (3-2) GEAR

Crankshaft Speed rpm	2100	1890	1680	1472	1236	1042
Pull—lbs *(kN)*	5968 *(26.54)*	6620 *(29.45)*	7141 *(31.76)*	7743 *(34.44)*	8311 *(36.97)*	7537 *(33.53)*
Increase in Pull %	0	11	20	30	39	26
Power—Hp *(kW)*	101.40 *(75.62)*	100.59 *(75.01)*	96.16 *(71.70)*	90.83 *(67.74)*	81.44 *(60.73)*	62.64 *(46.71)*
Speed—Mph *(km/h)*	6.37 *(10.25)*	5.70 *(9.17)*	5.05 *(8.13)*	4.40 *(7.08)*	3.67 *(5.91)*	3.12 *(5.02)*
Slip %	3.82	4.59	4.90	5.35	5.80	5.20

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	77.0
75% of Pull at Maximum Power—Ten Hours	77.5
50% of Pull at Maximum Power—Two Hours	77.0
50% of Pull at Reduced Engine Speed—Two Hours	74.5
Bystander in 12th (4-3) gear	87.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Inner Two 18.4-38, 8, 16 *(110)* Outer Two 18.4-38, 6, 16 *(110)*	Inner Two 18.4-38, 8, 16 *(110)* Outer Two 18.4-38, 6, 16 *(110)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	161 lb *(73 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 11.00-16SL, 6, 32 *(220)*	Two 11.00-16SL, 6, 32 *(220)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	58 lb *(26 kg)*	None
Height of Drawbar		19.5 in *(495 mm)*	19.5 in *(495 mm)*
Static Weight with Operator	—Rear	11330 lb *(5139 kg)*	10685 lb *(4847 kg)*
	—Front	3610 lb *(1637 kg)*	3495 lb *(1585 kg)*
	—Total	14940 lb *(6776 kg)*	14180 lb *(6432 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2225	*15340*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	172	*78*	
Location	sump		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	6604	*2996*	
TIME sec	2.44		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.0	*305*	
Top of timed range	36.0	*914*	
Highest position	36.0	*914*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	10.5	*267*	
Top of timed range	42.0	*1067*	
Highest position	42.1	*1070*	

*Implement load capacity for transport purposes not specified by manufacturer

REPAIRS AND ADJUSTMENTS: During the hydraulic lift test the control valve linkage was adjusted.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 123°F *(50.5°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

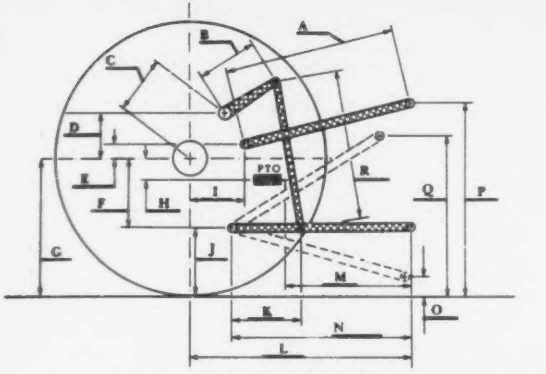
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1549**, December 10, 1984.

Report reissued. Supplemental sales permit for Case International 2096 Powershift Diesel June 18, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers

NEBRASKA TRACTOR TEST 1582
CASE INTERNATIONAL 2394 POWERSHIFT DIESEL
24 SPEED ALSO 12 SPEED
CHASSIS SERIAL NUMBERS 9939480 AND HIGHER



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	22.5	*572*
B	12.0	*305*
C	14.7	*372*
D	13.0	*330*
E	6.2	*157*
F	12.4	*315*
G	31.7	*805*
H	0.2	*5*
I	20.2	*512*
J	19.3	*490*
K	17.1	*434*
L	42.7	*1084*
M	20.7	*525*
N	30.2	*766*
O	8.0	*203*
P	38.3	*973*
Q	33.3	*845*
R	34.5	*876*

Case 2096 Powershift Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed—1002 rpm)									
	162.92	2100	10.304	0.444	15.81	189	64	76	29.03
	(121.49)		*(39.007)*	*(0.270)*	*(3.115)*	*(87.3)*	*(17.6)*	*(24.3)*	*(98.02)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	142.23	2157	9.313	0.459	15.27	186	64	75	......
	(106.06)		*(35.252)*	*(0.279)*	*(3.009)*	*(85.3)*	*(17.8)*	*(23.9)*	......
	0.00	2299	2.922	......	......	178	62	74	......
	(0.00)		*(11.060)*	......	......	*(81.1)*	*(16.7)*	*(23.1)*	......
	73.45	2228	5.831	0.557	12.60	181	62	74	......
	(54.78)		*(22.071)*	*(0.339)*	*(2.482)*	*(82.8)*	*(16.7)*	*(23.3)*	......
	162.40	2100	10.241	0.442	15.86	189	52	76	......
	(121.10)		*(38.766)*	*(0.269)*	*(3.124)*	*(87.2)*	*(16.7)*	*(24.2)*	......
	37.27	2261	4.419	0.832	8.43	180	62	76	......
	(27.79)		*(16.727)*	*(0.506)*	*(1.661)*	*(81.9)*	*(16.7)*	*(24.2)*	......
	108.33	2191	7.486	0.485	14.47	183	63	75	......
	(80.79)		*(28.338)*	*(0.295)*	*(2.851)*	*(83.9)*	*(17.2)*	*(23.9)*	......
Av	**87.28**	**2206**	**6.702**	**0.538**	**13.02**	**183**	**63**	**75**	**29.00**
Av	***(65.09)***		***(25.369)***	***(0.328)***	***(2.566)***	***(83.7)***	***(16.9)***	***(23.8)***	***(97.93)***

DRAWBAR PERFORMANCE

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 12th (3-2) Gear											
145.56	10649	5.13	2100	3.02	10.138	0.488	14.36	191	65	74	28.63
(108.54)	*(47.37)*	*(8.25)*			*(38.378)*	*(0.297)*	*(2.828)*	*(88.3)*	*(18.3)*	*(23.3)*	*(96.66)*
75% of Pull at Maximum Power — Ten Hours 12th (3-2) Gear											
117.06	8184	5.36	2181	2.25	8.635	0.517	13.56	187	54	68	29.06
(87.29)	*(36.40)*	*(8.63)*			*(32.688)*	*(0.315)*	*(2.670)*	*(86.2)*	*(12.2)*	*(19.9)*	*(98.11)*
50% of Pull at Maximum Power — Two Hours 12th (3-2) Gear											
79.71	5456	5.48	2210	1.45	6.702	0.590	11.89	186	65	74	28.60
(59.44)	*(24.27)*	*(8.82)*			*(25.369)*	*(0.359)*	*(2.343)*	*(85.3)*	*(18.1)*	*(23.3)*	*(96.56)*
50% of Pull at Reduced Engine Speed — Two Hours 16th (3-4) Gear											
79.74	5456	5.48	1661	1.45	5.604	0.493	14.23	185	52	62	29.08
(59.46)	*(24.27)*	*(8.82)*			*(21.213)*	*(0.300)*	*(2.803)*	*(85.0)*	*(10.8)*	*(16.7)*	*(98.20)*

Department of Agricultural Engineering

Dates of Test: October 16 to 28, 1985

Manufacturer: J.I. CASE COMPANY, 700 State Street, Racine, Wisconsin 53404

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** ***(15/15°C)*** 0.8423 **Fuel weight** 7.013 lbs/gal *(0.840 kg/l)* **Oil** Case Enginegard **SAE** 30 **API service classification** CD/SF **To motor** 6.769 gal *(25.624 l)* **Drained from motor** 6.459 gal *(24.449 l)* **Transmission and final drive lubricant** Case Powergard PTF transmission fluid **Total time engine was operated** 38.0 hours.

ENGINE: Make Case Diesel **Type** six cylinder vertical with turbocharger **Serial No.** *10366623* **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.625" × 5.00" *(117.5 mm × 127 mm)* **Compression ratio** 15.8 to 1 **Displacement** 504 cu in *(8259 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges and prestrainer **Muffler** vertical **Cooling medium temperature control** two thermostats.

CHASSIS: Type standard with duals **Serial No.** *9939481* **Tread width** rear 64" *(1626 mm)* to 134 *(3404 mm)* front 61" *(1549 mm)* to 89" *(2261 mm)* **Wheel base** 118" *(2997 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 27.5" *(700 mm)* Vertical distance above roadway 40.7" *(1034 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Advertised speeds mph** ***(km/h)*** first 1.9 *(3.0)* second 2.1 *(3.4)* third 2.5 *(4.0)* fourth 2.9 *(4.6)* fifth 3.1 *(5.0)* sixth 3.2 *(5.2)* seventh 3.6 *(5.8)* eighth 3.7 *(6.0)* ninth 4.3 *(6.9)* tenth 4.4 *(7.0)* eleventh 4.9 *(7.9)* twelfth 5.0 *(8.1)* thirteenth 5.4 *(8.6)* fourteenth 5.8 *(9.4)* fifteenth 6.2 *(9.9)* sixteenth 6.7 *(10.8)* seventeenth 7.3 *(11.7)* eighteenth 8.4 *(13.5)* nineteenth 10.4 *(16.7)* twentieth 11.9 *(19.1)* twenty-first 13.8 *(22.2)* twenty-second 15.9 *(25.5)* twenty-third 17.2 *(27.7)* twenty-fourth 20.8 *(33.5)* reverse 3.1 *(5.0)*, 5.4 *(8.6)*, 7.3 *(11.7)* **Clutch** wet multiple disc hydraulically power actuated by foot pedal **Brakes** wet multiple disc hydraulically power actuated by two foot pedals which can be locked

MAXIMUM POWER IN SELECTED GEARS

131.90 *(98.36)*	17425 *(77.51)*	2.84 *(4.57)*	2123	13.87	5th (1-5) Gear	186 *(85.3)*	45 *(7.2)*	48 *(8.9)*	28.99 *(97.89)*
138.94 *(103.60)*	17142 *(76.25)*	3.04 *(4.89)*	2102	9.99	6th (2-1) Gear	186 *(85.6)*	47 *(8.3)*	53 *(11.7)*	29.02 *(98.00)*
146.01 *(108.88)*	15386 *(68.44)*	3.56 *(5.73)*	2100	5.43	7th (1-6) Gear	186 *(85.6)*	59 *(15.0)*	62 *(16.7)*	28.76 *(97.12)*
147.33 *(109.87)*	14965 *(66.57)*	3.69 *(5.94)*	2098	5.11	8th (2-2) Gear	186 *(85.6)*	59 *(15.0)*	63 *(17.2)*	28.74 *(97.05)*
147.25 *(109.80)*	12744 *(56.69)*	4.33 *(6.97)*	2100	3.69	9th (2-3) Gear	187 *(85.8)*	60 *(15.6)*	64 *(17.8)*	28.73 *(97.02)*
147.84 *(110.24)*	12565 *(55.89)*	4.41 *(7.10)*	2101	3.69	10th (3-1) Gear	188 *(86.7)*	60 *(15.6)*	65 *(18.3)*	28.72 *(96.98)*
148.38 *(110.65)*	11043 *(49.12)*	5.04 *(8.11)*	2101	2.93	11th (2-4) Gear	189 *(86.9)*	60 *(15.6)*	66 *(16.9)*	28.71 *(96.95)*
148.98 *(111.10)*	10912 *(48.54)*	5.12 *(8.24)*	2098	2.93	12th (3-2) Gear	189 *(87.2)*	60 *(15.6)*	67 *(19.4)*	28.70 *(96.92)*
147.83 *(110.24)*	10130 *(45.06)*	5.47 *(8.81)*	2098	2.76	13th (2-5) Gear	189 *(87.2)*	61 *(16.1)*	68 *(20.0)*	28.69 *(96.88)*
147.08 *(109.68)*	9262 *(41.20)*	5.95 *(9.58)*	2099	2.41	14th (3-3) Gear	190 *(87.5)*	62 *(16.7)*	69 *(20.6)*	28.68 *(96.85)*
146.82 *(109.49)*	8685 *(38.63)*	6.34 *(10.20)*	2098	2.24	15th (2-6) Gear	189 *(87.2)*	63 *(17.2)*	70 *(21.1)*	28.68 *(96.85)*
146.43 *(109.19)*	7953 *(35.38)*	6.90 *(11.11)*	2101	2.07	16th (3-4) Gear	190 *(87.5)*	65 *(18.3)*	73 *(22.8)*	28.66 *(96.78)*
144.67 *(107.88)*	7246 *(32.23)*	7.49 *(12.05)*	2098	1.80	17th (3-5) Gear	190 *(87.8)*	65 *(18.3)*	72 *(22.2)*	28.67 *(96.81)*
144.28 *(107.59)*	6243 *(27.77)*	8.67 *(13.95)*	2100	1.54	18th (3-6) Gear	189 *(87.2)*	65 *(18.3)*	71 *(21.7)*	28.67 *(96.81)*

LUGGING ABILITY IN 12th (3-2) GEAR

Crankshaft Speed rpm	2098	1892	1683	1470	1256	1048
Pull—lbs *(kN)*	10912 *(48.54)*	11837 *(52.65)*	12368 *(55.02)*	12456 *(55.41)*	12168 *(54.13)*	11257 *(50.07)*
Increase in Pull %	0	8	13	14	12	3
Power—Hp *(kW)*	148.98 *(111.10)*	145.27 *(108.33)*	134.62 *(100.39)*	118.40 *(88.29)*	98.91 *(73.76)*	76.61 *(57.12)*
Speed—Mph *(km/h)*	5.12 *(8.24)*	4.60 *(7.41)*	4.08 *(6.57)*	3.56 *(5.74)*	3.05 *(4.91)*	2.55 *(4.11)*
Slip %	2.93	3.10	3.44	3.61	3.44	3.10

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	75.5
75% of Pull at Maximum Power—Ten Hours	75.5
50% of Pull at Maximum Power—Two Hours	76.0
50% of Pull at Reduced Engine Speed—Two Hours	75.0
Bystander in 23rd (4-5) gear	87.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 20.8R38; 8; inner 16 *(110)* outer 12 *(83)*	Four 20.8R38; 8; inner 16 *(110)* outer 12 *(83)*
Ballast	—Liquid (each inner)	990 lb *(449 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 14L-16.1; 10; 44 *(305)*	Two 14L-16.1; 10; 44 *(305)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	125 lb *(57 kg)*	None
Height of Drawbar		20.5 in *(520 mm)*	20.5 in *(520 mm)*
Static Weight with Operator	—Rear	14630 lb *(6636 kg)*	12650 lb *(5738 kg)*
	—Front	4000 lb *(1814 kg)*	3750 lb *(1701 kg)*
	—Total	18630 lb *(8450 kg)*	16400 lb *(7439 kg)*

together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 163.8" *(4.16 m)* left 163.8" *(4.16 m)*(on concrete surface without brake) right 184.5" *(4.69 m)* left 184.5" *(4.69 m)* **Turning space diameter** (on concrete surface with brake applied) right 342" *(8.69 m)* left 342" *(8.69 m)*(on concrete surface without brake) right 388.8" *(9.88 m)* left 388.8" *(9.88 m)* **Power take-off** 1002 rpm at 2100 engine rpm **Unladen tractor mass** 13970 lb *(6337 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 156°F *(68.9°C)*. Fourteen gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. The performance figures on this report apply to tractor chassis Serial No. 104-00331 and higher.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1582**, December 3, 1985.

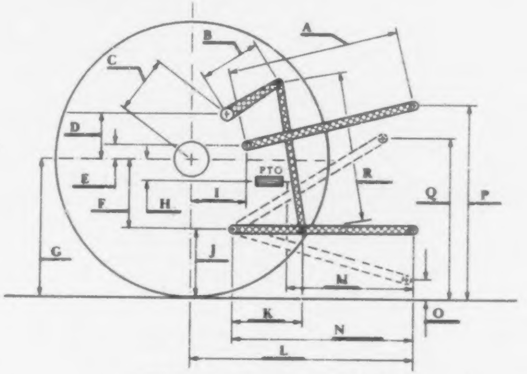
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2225	*(15340)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	150	*(66)*	
Location	transmission drain plug		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	7758	*(3519)*	
TIME sec	2.34		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	9.9	*(251)*	
Top of timed range	35.9	*(912)*	
Highest position	40.3	*(1024)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	9.7	*(246)*	
Top of timed range	39.2	*(996)*	
Highest position	46.0	*(1168)*	

*Implement load capacity for transport purposes not specified by manufacturer



	inch	mm
A	23.5	*597*
B	11.4	*289*
C	11.5	*293*
D	1.9	*48*
E	7.7	*196*
F	12.7	*322*
G	33.2	*843*
H	6.0	*152*
I	21.9	*557*
J	20.5	*521*
K	17.4	*441*
L	45.8	*1163*
L'	49.8	*1265*
M	21.1	*536*
N	35.4	*899*
O	8.0	*203*
P	42.6	*1082*
Q	42.1	*1070*
R	20.8	*527*

L' to end of quick attach

Hitch Dimensions as Tested — No Load

Case International 2394 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1583
CASE INTERNATIONAL 3394 POWERSHIFT DIESEL
24 SPEED ALSO 12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 1002 rpm)								
162.86 (121.45)	2100	10.585 (40.067)	0.456 (0.277)	15.39 (3.031)	189 (86.9)	63 (17.3)	75 (23.9)	28.93 (97.69)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
141.73 (105.69)	2150	9.544 (36.127)	0.472 (0.287)	14.85 (2.925)	185 (85.0)	64 (17.5)	74 (23.3)	—
0.00 (0.00)	2294	3.106 (11.756)	—	—	174 (78.9)	64 (17.8)	73 (22.8)	—
73.42 (54.75)	2229	6.070 (22.978)	0.580 (0.353)	12.10 (2.383)	180 (82.2)	64 (17.8)	74 (23.3)	—
163.54 (121.95)	2100	10.485 (39.689)	0.450 (0.273)	15.60 (3.073)	189 (87.2)	65 (18.3)	77 (24.7)	—
37.33 (27.84)	2263	4.658 (17.634)	0.875 (0.532)	8.01 (1.579)	176 (80.0)	65 (18.1)	76 (24.4)	—
108.55 (80.89)	2191	7.807 (29.552)	0.505 (0.307)	13.88 (2.734)	183 (83.6)	65 (18.3)	75 (23.9)	—
Av 87.40 Av (65.18)	**2204**	**6.945 (26.290)**	**0.557 (0.339)**	**12.56 (2.479)**	**181 (82.8)**	**66 (18.8)**	**75 (23.8)**	**28.96 (97.79)**

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 16th (3-4) Gear											
141.17 (105.27)	7692 (34.22)	6.88 (11.08)	2100	2.83	10.452 (39.565)	0.519 (0.316)	13.51 (2.661)	189 (86.9)	59 (14.7)	64 (17.8)	28.98 (97.84)
75% of Pull at Maximum Power — Ten Hours 16th (3-4) Gear											
112.49 (83.88)	5900 (26.24)	7.15 (11.51)	2165	2.05	9.010 (34.108)	0.562 (0.342)	12.49 (2.459)	187 (86.1)	54 (12.2)	66 (19.1)	28.73 (97.00)
50% of Pull at Maximum Power — Two Hours 16th (3-4) Gear											
76.66 (57.16)	3915 (17.41)	7.34 (11.82)	2211	1.52	7.265 (27.501)	0.665 (0.404)	10.55 (2.079)	182 (83.3)	56 (13.3)	57 (13.6)	28.98 (97.84)
50% of Pull at Reduced Engine Speed — Two Hours 16th (3-4) Gear											
76.61 (57.13)	3914 (17.41)	7.34 (11.81)	1786	1.59	6.181 (23.399)	0.566 (0.344)	12.39 (2.442)	183 (83.6)	55 (12.5)	56 (13.1)	28.96 (97.79)

Department of Agricultural Engineering

Dates of Test: October 15 to 24, 1985

Manufacturer: J.I. CASE COMPANY, 700 State Street, Racine, Wisconsin 53404

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8423 **Fuel weight** 7.015 lbs/gal *(0.840 kg/l)* **Oil** Case Enginegard **SAE** 30 **API service classification** CD/SF **To motor** 5.280 gal *(19.988 l)* **Drained from motor** 4.819 gal *(18.240 l)* **Transmission and hydraulic lubricant** Case Powergard PTF transmission fluid **Front axle lubricant** Case Loadgard-GL5 85W140EP gear lubricant **Total time engine was operated** 39.0 hours.

ENGINE: Make Case Diesel **Type** six cylinder vertical with turbocharger **Serial No.** *10365824* **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.625" × 5.00" *(117.5 mm × 127 mm)* **Compression ratio** 15.8 to 1 **Displacement** 504 cu in *(8259 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges and prestrainer **Muffler** vertical **Cooling medium temperature control** two thermostats.

CHASSIS: Type all wheel drive with constant mesh front axle **Serial No.** *9938917* **Tread width** rear 64" *(1626 mm)* to 110" *(2794 mm)* front 60" *(1524 mm)* to 88" *(2235 mm)* **Wheel base** 116" *(2946 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 38.4" *(976 mm)* Vertical distance above roadway 38.0" *(965 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Advertised speeds mph** *(km/h)* first 1.9 *(3.0)* second 2.1 *(3.4)* third 2.5 *(4.0)* fourth 2.9 *(4.6)* fifth 3.1 *(5.0)* sixth 3.2 *(5.2)* seventh 3.6 *(5.8)* eighth 3.7 *(6.0)* ninth 4.3 *(6.9)* tenth 4.4 *(7.0)* eleventh 4.9 *(7.9)* twelfth 5.0 *(8.1)* thirteenth 5.4 *(8.6)* fourteenth 5.8 *(9.4)* fifteenth 6.2 *(9.9)* sixteenth 6.7 *(10.8)* seventeenth 7.3 *(11.7)* eighteenth 8.4 *(13.5)* nineteenth 10.4 *(16.7)* twentieth 11.9 *(19.1)* twenty-first 13.8 *(22.2)* twenty-second 15.9 *(25.5)* twenty-third 17.2 *(27.7)* twenty-fourth 20.8 *(33.5)*; reverse 3.1 *(5.0)*, 5.4 *(8.6)*, 7.3 *(11.7)* **Clutch** wet multiple disc hydraulically power actuated by foot pedal **Brakes** wet multiple disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 173" *(4.39 m)* left 173" *(4.39 m)*(on concrete surface without brake) right 233" *(5.92 m)* left 233" *(5.92 m)* **Turning space diameter** (on concrete surface with brake applied) right 364" *(9.25 m)* left 364" *(9.25 m)*(on concrete surface without brake) right 486" *(12.34 m)* left 486" *(12.34 m)* **Power take-off** 1002 rpm at 2100 engine rpm **Unladen tractor mass** 15620 lb *(7085 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 156°F *(68.9°C)*. Fifteen gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1583**, December 3, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

MAXIMUM POWER IN SELECTED GEARS

122.11 (91.05)	17421 (77.49)	2.63 (4.23)	2139	14.64	4th (1-4) Gear	184 (84.4)	54 (12.2)	55 (12.8)	29.01 (97.96)
130.20 (97.09)	17303 (76.97)	2.82 (4.54)	2102	13.97	5th (1-5) Gear	185 (84.7)	54 (12.2)	55 (12.8)	29.01 (97.96)
135.66 (101.16)	16014 (71.24)	3.01 (4.84)	2101	11.47	6th (2-1) Gear	185 (85.0)	54 (12.2)	55 (12.8)	29.02 (98.00)
140.95 (105.11)	15191 (67.57)	3.48 (5.60)	2100	7.97	7th (1-6) Gear	185 (85.0)	55 (12.8)	56 (13.3)	29.02 (98.00)
142.38 (106.18)	14727 (65.51)	3.63 (5.84)	2100	7.35	8th (2-2) Gear	185 (85.0)	55 (12.8)	58 (14.4)	29.03 (98.03)
142.53 (106.28)	12493 (55.57)	4.28 (6.89)	2100	5.51	9th (2-3) Gear	186 (85.6)	55 (12.8)	58 (14.4)	29.03 (98.03)
143.27 (106.83)	12325 (54.82)	4.36 (7.02)	2100	5.43	10th (3-1) Gear	186 (85.3)	55 (12.8)	58 (14.4)	29.03 (98.03)
144.39 (107.67)	10852 (48.27)	4.99 (8.03)	2100	4.44	11th (2-4) Gear	186 (85.6)	55 (12.8)	58 (14.4)	29.03 (98.03)
144.82 (107.99)	10687 (47.54)	5.08 (8.18)	2100	4.27	12th (3-2) Gear	186 (85.3)	56 (13.3)	59 (15.0)	29.03 (98.03)
143.83 (107.25)	9921 (44.13)	5.44 (8.75)	2099	3.94	13th (2-5) Gear	187 (85.8)	56 (13.3)	59 (15.0)	29.03 (98.03)
143.08 (106.70)	9052 (40.27)	5.93 (9.54)	2101	3.43	14th (3-3) Gear	187 (86.1)	56 (13.3)	59 (15.0)	29.03 (98.03)
143.14 (106.74)	8498 (37.80)	6.32 (10.17)	2100	3.09	15th (2-6) Gear	187 (85.8)	56 (13.3)	60 (15.6)	29.03 (98.03)
144.29 (107.60)	7866 (34.99)	6.88 (11.07)	2099	2.74	16th (3-4) Gear	189 (87.2)	58 (14.4)	64 (17.8)	28.96 (97.79)
141.08 (105.20)	7079 (31.49)	7.47 (12.03)	2100	2.57	17th (3-5) Gear	187 (86.1)	57 (13.9)	61 (16.1)	29.02 (98.00)
139.70 (104.17)	6056 (26.94)	8.65 (13.92)	2098	2.15	18th (3-6) Gear	187 (86.1)	56 (13.3)	61 (16.1)	29.03 (98.03)

LUGGING ABILITY IN 16th (3-4) GEAR

Crankshaft Speed rpm	2099	1889	1680	1475	1267	1052
Pull—lbs (kN)	7866 (34.99)	8587 (38.20)	9080 (40.34)	9353 (41.60)	9267 (41.22)	8599 (38.25)
Increase in Pull %	0	9	15	19	18	9
Power—Hp (kW)	144.29 (107.60)	140.99 (105.13)	132.28 (98.64)	119.55 (89.15)	101.75 (75.87)	78.57 (58.59)
Speed—Mph (km/h)	6.88 (11.07)	6.16 (9.91)	5.47 (8.80)	4.79 (7.71)	4.12 (6.63)	3.43 (5.51)
Slip %	2.74	3.26	3.26	3.43	3.43	3.26

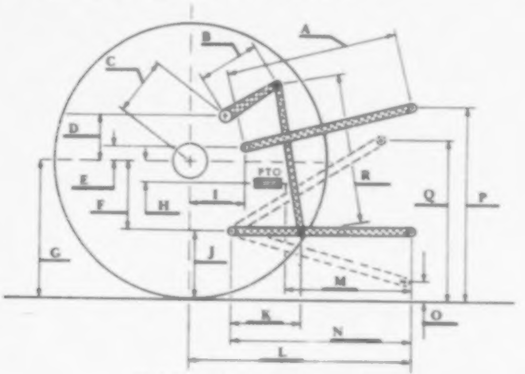
TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	75.0
75% of Pull at Maximum Power—Ten Hours	74.0
50% of Pull at Maximum Power—Two Hours	75.5
50% of Pull at Reduced Engine Speed—Two Hours	75.0
Bystander in 23rd (4-5) gear	88.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 20.8R38, 8, 18 *(125)*	Two 20.8R38, 8, 18 *(125)*
Ballast	—Liquid (each)	225 lb *(102 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 16.9-28, 10, 28 *(195)*	Two 16.9-28, 10, 28 *(195)*
Ballast	—Liquid (each)	685 lb *(311 kg)*	None
	—Cast Iron (each)	495 lb *(224 kg)*	None
Height of Drawbar		22.5 in *(570 mm)*	22.5 in *(570 mm)*
Static Weight with Operator	—Rear	11150 lb *(5057 kg)*	10700 lb *(4854 kg)*
	—Front	7460 lb *(3384 kg)*	5100 lb *(2313 kg)*
	—Total	18610 lb *(8441 kg)*	15800 lb *(7167 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2500	*(17380)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	154	*(68)*	
Location	transmission drain plug		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	7752	*(3516)*	
TIME sec	2.05		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	9.7	*(246)*	
Top of timed range	35.7	*(906)*	
Highest position	40.0	*(1016)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	9.4	*(239)*	
Top of timed range	38.9	*(988)*	
Highest position	43.9	*(1116)*	

*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	mm
A	23.3	*591*
B	11.4	*289*
C	11.5	*293*
D	1.9	*48*
E	7.7	*196*
F	12.7	*322*
G	32.8	*833*
H	6.0	*152*
I	21.9	*557*
J	20.1	*511*
K	17.4	*441*
L	45.8	*1163*
L'	49.8	*1265*
M	21.1	*536*
N	35.4	*899*
O	7.9	*200*
P	42.2	*1073*
Q	40.4	*1026*
R	20.8	*527*

L' to end of quick attach

Case International 3394 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1584
CASE INTERNATIONAL 3594 POWERSHIFT DIESEL
24 SPEED ALSO 12 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F *(°C)* Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed — 1002 rpm)									
	182.27 *(135.92)*	2100	11.800 *(44.667)*	0.454 *(0.276)*	15.45 *(3.043)*	196 *(90.8)*	60 *(15.6)*	75 *(24.1)*	28.73 *(97.07)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	160.42 *(119.62)*	2174	10.602 *(40.132)*	0.463 *(0.282)*	15.13 *(2.981)*	187 *(86.1)*	57 *(13.9)*	75 *(23.6)*	—
	0.00 *(0.00)*	2294	2.982 *(11.288)*	—	—	176 *(80.0)*	56 *(13.3)*	71 *(21.7)*	—
	85.01 *(63.40)*	2254	6.572 *(24.876)*	0.555 *(0.338)*	12.63 *(2.488)*	180 *(81.9)*	57 *(13.6)*	79 *(25.8)*	—
	182.79 *(136.31)*	2100	11.808 *(44.699)*	0.453 *(0.276)*	15.48 *(3.049)*	191 *(88.1)*	56 *(13.3)*	76 *(24.4)*	—
	41.86 *(31.22)*	2272	4.728 *(17.896)*	0.792 *(0.482)*	8.86 *(1.744)*	183 *(83.6)*	55 *(12.8)*	73 *(21.9)*	—
	122.86 *(91.61)*	2221	8.595 *(32.537)*	0.491 *(0.298)*	14.29 *(2.816)*	183 *(83.9)*	55 *(12.8)*	76 *(24.2)*	—
Av **Av**	**98.49** ***(73.45)***	**2219**	**7.548** ***(28.571)***	**0.537** ***(0.327)***	**13.05** ***(2.571)***	**183** ***(83.9)***	**56** ***(13.3)***	**75** ***(23.9)***	**28.73** ***(97.02)***

DRAWBAR PERFORMANCE

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F *(°C)* Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 10th (3-4) Gear											
160.39 *(119.60)*	8668 *(38.55)*	6.94 *(11.17)*	2100	2.19	11.708 *(44.321)*	0.512 *(0.311)*	13.70 *(2.699)*	190 *(87.5)*	53 *(11.7)*	61 *(16.1)*	29.05 *(98.38)*
75% of Pull at Maximum Power — Ten Hours 10th (3-4) Gear											
129.20 *(96.35)*	6621 *(29.45)*	7.32 *(11.78)*	2202	1.74	10.010 *(37.892)*	0.543 *(0.330)*	12.91 *(2.543)*	177 *(80.6)*	50 *(10.0)*	62 *(16.4)*	29.06 *(98.41)*
50% of Pull at Maximum Power — Two Hours 10th (3-4) Gear											
88.50 *(65.84)*	4414 *(19.63)*	7.50 *(12.07)*	2246	1.31	7.886 *(29.854)*	0.626 *(0.381)*	11.20 *(2.206)*	184 *(84.4)*	47 *(8.3)*	52 *(11.1)*	29.06 *(98.41)*
50% of Pull at Reduced Engine Speed — Two Hours 10th (3-6) Gear											
88.42 *(65.93)*	4415 *(19.63)*	7.51 *(12.09)*	1800	1.26	6.767 *(25.616)*	0.537 *(0.326)*	13.07 *(2.574)*	184 *(84.4)*	51 *(10.6)*	60 *(15.5)*	29.05 *(98.38)*

Department of Agricultural Engineering

Dates of Test: October 16 to 31, 1985

Manufacturer: J.I. CASE COMPANY, 700 State Street, Racine, Wisconsin 53404

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8421 **Fuel weight** 7.012 lbs/gal *(0.840 kg/l)* **Oil** Case Enginegard **SAE** 30 **API service classification** CD/SF **To motor** 5.204 gal *(19.698 l)* **Drained from motor** 4.873 gal *(18.447 l)* **Transmission and hydraulic lubricant** Case Powergard PTF transmission fluid **Front axle lubricant** Case Loadgard-GL5 85W140EP gear lubricant **Total time engine was operated** 43.5 hours.

ENGINE: Make Case Diesel **Type** six cylinder vertical with turbocharger **Serial No.** *10365398* **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.625" × 5.00" *(117.5 mm × 127 mm)* **Compression ratio** 15.8 to 1 **Displacement** 504 cu in *(8259 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges and prestrainer **Muffler** vertical **Cooling medium temperature control** two thermostats.

CHASSIS: Type all wheel drive with rear duals and constant mesh front axle **Serial No.** *9939036* **Tread width** rear 64" *(1626 mm)* to 134" *(3404 mm)* front 60" *(1524 mm)* to 89" *(2261 mm)* **Wheel base** 116" *(2946 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 34.0" *(864 mm)* Vertical distance above roadway 38.0" *(965 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Advertised speeds mph (km/h)** first 1.9 *(3.0)* second 2.1 *(3.4)* third 2.5 *(4.0)* fourth 2.9 *(4.6)* fifth 3.1 *(5.0)* sixth 3.2 *(5.2)* seventh 3.6 *(5.8)* eighth 3.7 *(6.0)* ninth 4.3 *(6.9)* tenth 4.4 *(7.0)* eleventh 4.9 *(7.9)* twelfth 5.0 *(8.1)* thirteenth 5.4 *(8.6)* fourteenth 5.8 *(9.4)* fifteenth 6.2 *(9.9)* sixteenth 6.7 *(10.8)* seventeenth 7.3 *(11.7)* eighteenth 8.4 *(13.5)* nineteenth 10.4 *(16.7)* twentieth 11.9 *(19.1)* twenty-first 13.8 (22.2) twenty-second 15.9 *(25.5)* twenty-third 17.2 *(27.7)* twenty-fourth 20.8 *(33.5)* reverse 3.1 *(5.0)*, 5.4 *(8.6)*, 7.3 *(11.7)* **Clutch** wet multiple disc

MAXIMUM POWER IN SELECTED GEARS

145.08 *(108.19)*	20384 *(90.67)*	2.67 *(4.30)*	2153	14.12	4th (1-4) Gear	184 *(84.2)*	37 *(2.8)*	40 *(4.4)*	29.08 *(98.20)*
155.27 *(115.79)*	19944 *(88.71)*	2.92 *(4.70)*	2099	11.11	5th (1-5) Gear	185 *(85.0)*	43 *(6.1)*	46 *(7.8)*	29.02 *(98.00)*
160.80 *(119.91)*	19280 *(85.76)*	3.13 *(5.03)*	2101	8.28	6th (2-1) Gear	186 *(85.5)*	44 *(6.7)*	48 *(8.9)*	29.05 *(98.10)*
162.18 *(120.94)*	16964 *(75.46)*	3.59 *(5.77)*	2102	5.50	7th (1-6) Gear	189 *(87.2)*	54 *(12.2)*	75 *(23.9)*	29.08 *(98.20)*
163.28 *(121.76)*	16465 *(73.23)*	3.72 *(5.99)*	2099	5.35	8th (2-2) Gear	189 *(87.2)*	54 *(12.2)*	74 *(23.3)*	29.08 *(98.20)*
163.33 *(121.79)*	14044 *(62.47)*	4.36 *(7.02)*	2100	4.08	9th (2-3) Gear	191 *(88.3)*	55 *(12.8)*	73 *(22.8)*	29.07 *(98.17)*
164.37 *(122.57)*	13890 *(61.78)*	4.44 *(7.14)*	2100	3.92	10th (3-1) Gear	191 *(88.1)*	56 *(13.3)*	72 *(22.2)*	29.07 *(98.17)*
165.12 *(123.13)*	12220 *(54.36)*	5.07 *(8.15)*	2100	3.32	11th (2-4) Gear	190 *(87.5)*	56 *(13.3)*	72 *(22.2)*	29.07 *(98.17)*
164.99 *(123.03)*	12008 *(53.41)*	5.15 *(8.29)*	2099	3.23	12th (3-2) Gear	190 *(87.8)*	56 *(13.3)*	72 *(22.2)*	29.07 *(98.17)*
164.29 *(122.51)*	11190 *(49.78)*	5.51 *(8.86)*	2098	2.89	13th (2-5) Gear	190 *(87.8)*	55 *(12.8)*	72 *(22.2)*	29.07 *(98.17)*
163.41 *(121.85)*	10223 *(45.47)*	5.99 *(9.63)*	2100	2.63	14th (3-3) Gear	192 *(88.6)*	55 *(12.8)*	72 *(22.2)*	29.07 *(98.17)*
163.44 *(121.88)*	9592 *(42.67)*	6.39 *(10.28)*	2101	2.37	15th (2-6) Gear	191 *(88.3)*	55 *(12.8)*	72 *(22.2)*	29.08 *(98.20)*
163.52 *(121.94)*	8828 *(39.27)*	6.95 *(11.18)*	2100	2.19	16th (3-4) Gear	192 *(88.6)*	56 *(13.3)*	72 *(22.2)*	29.09 *(98.23)*
161.82 *(120.67)*	8045 *(35.78)*	7.54 *(12.14)*	2100	2.11	17th (3-5) Gear	191 *(88.3)*	56 *(13.3)*	72 *(22.2)*	29.09 *(98.23)*
159.35 *(118.83)*	6852 *(30.48)*	8.72 *(14.04)*	2099	1.58	18th (3-6) Gear	191 *(88.3)*	55 *(12.8)*	72 *(22.2)*	29.08 *(98.20)*

LUGGING ABILITY IN 16th (3-4) GEAR

Crankshaft Speed rpm	2100	1892	1672	1474	1257	1059
Pull—lbs *(kN)*	8828 *(39.27)*	9793 *(43.56)*	10432 *(46.40)*	10630 *(47.28)*	10235 *(45.53)*	9210 *(40.97)*
Increase in Pull %	0	11	18	20	16	4
Power—Hp *(kW)*	163.52 *(121.94)*	162.93 *(121.50)*	153.05 *(114.13)*	137.45 *(102.49)*	112.96 *(84.23)*	85.84 *(64.01)*
Speed—Mph *(km/h)*	6.95 *(11.18)*	6.24 *(10.04)*	5.50 *(8.85)*	4.85 *(7.80)*	4.14 *(6.66)*	3.49 *(5.62)*
Slip %	2.19	2.54	2.54	2.89	2.72	2.54

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	77.0
75% of Pull at Maximum Power—Ten Hours	76.0
50% of Pull at Maximum Power—Two Hours	76.5
50% of Pull at Reduced Engine Speed—Two Hours	74.5
Bystander in 23rd (4-5) gear	88.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 20.8R38, 8, inner 16 *(110)* outer 12 *(85)*	Four 20.8R38, 8, inner 16 *(110)* outer 12 *(85)*
Ballast	—Liquid (each)	None	None
	—Test equip. (each)	8 lb *(3 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 16.9-28, 10, 28 *(195)*	Two 16.9-28, 10, 28 *(195)*
Ballast	—Liquid (each)	688 lb *(312 kg)*	None
	—Cast Iron (each)	752 lb *(341 kg)*	None
Height of Drawbar		23 in *(585 mm)*	23 in *(585 mm)*
Static Weight with Operator	—Rear	12520 lb *(5679 kg)*	12490 lb *(5666 kg)*
	—Front	7980 lb *(3620 kg)*	5100 lb *(2313 kg)*
	—Total	20500 lb *(9299 kg)*	17590 lb *(7979 kg)*

hydraulically power actuated by foot pedal **Brakes** wet multiple disc hydraulically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 173" *(4.39 m)* left 173" *(4.39 m)*(on concrete surface without brake) right 233" *(5.92 m)* left 233" *(5.92 m)* **Turning space diameter** (on concrete surface with brake applied) right 364" *(9.25 m)* left 364" *(9.25 m)*(on concrete surface without brake) right 486" *(12.34 m)* left 486" *(12.34 m)* **Power take-off** 1002 rpm at 2100 engine rpm **Unladen tractor mass** 15620 lb *(7085 kg)*.

REPAIRS AND ADJUSTMENTS: During preliminary PTO test, the PTO control cable broke. The cable was replaced at end of tests.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 162°F *(72.2°C)*. Fifteen gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1584**, December 3, 1985.

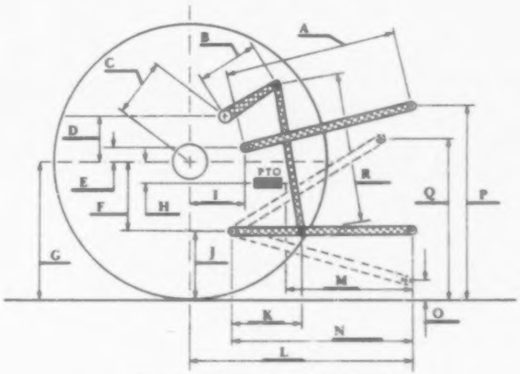
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2250	*(15510)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	157	*(69)*	
Location	transmission drain plug		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	7758	*(3519)*	
TIME sec	1.93		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	9.9	*(251)*	
Top of timed range	35.9	*(912)*	
Highest position	40.2	*(1021)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	10.0	*(254)*	
Top of timed range	39.3	*(998)*	
Highest position	46.0	*(1168)*	

*Implement load capacity for transport purposes not specified by manufacturer



	inch	*mm*
A	23.5	*597*
B	11.4	*289*
C	11.5	*293*
D	1.9	*48*
E	7.7	*196*
F	12.7	*322*
G	33.9	*862*
H	6.0	*152*
I	21.9	*557*
J	21.3	*540*
K	17.4	*441*
L	45.8	*1163*
L'	49.8	*1265*
M	21.1	*536*
N	35.4	*899*
O	8.0	*203*
P	43.4	*1101*
Q	40.6	*1032*
R	21.9	*556*

L' to end of quick attach

Hitch Dimensions as Tested — No Load

Case International 3594 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1574—DEUTZ-FAHR DX 3.50 DIESEL ALSO DEUTZ-ALLIS 6260 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —613 rpm)								
57.09 *(42.57)*	2500	3.840 *(14.535)*	0.472 *(0.287)*	14.87 *(2.929)*	235 *(112.7)*	66 *(18.8)*	75 *(23.8)*	29.31 *(98.96)*
Standard Power Take-off Speed (540 rpm) — One Hour								
55.35 *(41.28)*	2202	3.578 *(13.545)*	0.455 *(0.276)*	15.47 *(3.047)*	241 *(115.8)*	67 *(19.2)*	75 *(23.8)*	29.30 *(98.94)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
49.61 *(36.99)*	2556	3.068 *(11.612)*	0.434 *(0.264)*	16.17 *(3.186)*	214 *(101.1)*	68 *(19.7)*	76 *(24.4)*	—
0.00 *(0.00)*	2656	0.993 *(3.757)*	—	—	162 *(72.2)*	67 *(19.4)*	76 *(24.4)*	—
25.23 *(18.82)*	2600	1.947 *(7.369)*	0.541 *(0.329)*	12.96 *(2.554)*	169 *(75.8)*	67 *(19.4)*	75 *(23.9)*	—
57.37 *(42.78)*	2499	3.898 *(14.754)*	0.476 *(0.290)*	14.72 *(2.900)*	225 *(106.1)*	68 *(19.7)*	75 *(23.6)*	—
12.77 *(9.52)*	2629	1.420 *(5.377)*	0.780 *(0.475)*	8.99 *(1.771)*	175 *(79.2)*	67 *(19.4)*	76 *(24.4)*	—
37.67 *(28.09)*	2587	2.516 *(9.523)*	0.468 *(0.285)*	14.97 *(2.950)*	185 *(83.9)*	67 *(19.4)*	76 *(24.4)*	—
Av **30.44** Av **(22.70)**	**2580**	**2.307** ***(8.732)***	**0.531** ***(0.323)***	**13.20** ***(2.600)***	**188** ***(86.4)***	**67** ***(19.5)***	**76** ***(24.2)***	**29.30** ***(98.94)***

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 4th (1H) Gear											
50.22 *(37.45)*	4099 *(18.23)*	4.59 *(7.39)*	2501	6.50	3.879 *(14.684)*	0.542 *(0.329)*	12.95 *(2.550)*	193 *(89.4)*	43 *(6.1)*	51 *(10.8)*	29.01 *(97.98)*
75% of Pull at Maximum Power — Ten Hours 4th (1H) Gear											
39.94 *(29.78)*	3104 *(13.81)*	4.82 *(7.76)*	2565	4.75	2.966 *(11.229)*	0.521 *(0.317)*	13.46 *(2.652)*	165 *(74.1)*	45 *(7.1)*	51 *(10.5)*	28.93 *(97.70)*
50% of Pull at Maximum Power — Two Hours 4th (1H) Gear											
27.21 *(20.29)*	2069 *(9.20)*	4.93 *(7.94)*	2608	3.52	2.339 *(8.851)*	0.605 *(0.367)*	11.63 *(2.292)*	151 *(66.1)*	51 *(10.5)*	55 *(12.5)*	29.16 *(98.47)*
50% of Pull at Reduced Engine Speed — Two Hours 6th (2H) Gear											
27.21 *(20.29)*	2060 *(9.20)*	4.94 *(7.96)*	1637	3.26	1.804 *(6.829)*	0.463 *(0.281)*	15.08 *(2.972)*	157 *(69.4)*	41 *(4.7)*	45 *(7.2)*	29.08 *(98.18)*
MAXIMUM POWER IN SELECTED GEARS											
46.46 *(34.65)*	7270 *(32.34)*	2.40 *(3.86)*	2515	14.96	2nd (2L) Gear			179 *(81.7)*	50 *(10.0)*	54 *(12.2)*	29.18 *(98.54)*
49.39 *(36.83)*	4899 *(21.79)*	3.78 *(6.09)*	2500	7.34	3rd (3L) Gear			192 *(88.9)*	50 *(10.0)*	54 *(12.2)*	29.18 *(98.54)*
50.73 *(37.83)*	4138 *(18.41)*	4.60 *(7.40)*	2500	6.24	4th (1H) Gear			195 *(90.6)*	50 *(10.0)*	56 *(13.3)*	29.21 *(98.64)*
50.59 *(37.73)*	3067 *(13.64)*	6.16 *(9.92)*	2501	4.32	5th (4L) Gear			188 *(86.7)*	50 *(10.0)*	55 *(12.8)*	29.19 *(98.57)*
50.06 *(37.33)*	2497 *(11.11)*	7.52 *(12.10)*	2502	3.39	6th (2H) Gear			189 *(87.2)*	50 *(10.0)*	54 *(12.2)*	29.19 *(98.57)*

Dates of Test: September 11 to 25, 1985

Manufacturer: KLOCKNER-HUMBOLDT-DEUTZ AG, 5000 Cologne 80, West Germany

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8422 **Fuel weight** 7.012 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W-40 **API service classification** CD-SF **To motor** 2.584 gal *(9.781 l)* **Drained from motor** 1.774 gal *(6.714 l)* **Transmission and final drive lubricant** SAE 15W-40 engine oil **Front axle lubricant** SAE 90 transmission oil **Total time engine was operated** 48.5 hours.

ENGINE: Make Klockner-Humboldt-Deutz Diesel **Type** three cylinder vertical **Serial No.** 6455 472 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.02" × 4.92" *(102 mm × 125 mm)* **Compression ratio** 17 to 1 **Displacement** 187 cu in *(3064 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element and one felt element **Oil filter** one full flow cartridge **Oil cooler** radiator for crankcase oil, radiator for hydraulic oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** air cooled.

CHASSIS: Type front wheel assist **Serial No.** 7744 0413 **Tread width** rear 55.9" *(1420 mm)* to 75.6" *(1920 mm)* front 59.1" *(1500 mm)* to 65.0" *(1650 mm)* **Wheel base** 81.9" *(2079 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 35.6" *(904 mm)* Vertical distance above roadway 33.2" *(844 mm)* Horizontal distance from center of rear wheel tread 0.4" *(10 mm)* to the left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.7 *(2.8)* second 2.8 *(4.5)* third 4.1 *(6.6)* fourth 4.9 *(7.9)* fifth 6.5 *(10.4)* sixth 7.8 *(12.6)* seventh 12.3 *(19.8)* eighth 18.9 *(30.4)* reverse 2.0 *(3.2)*, 3.2 *(5.1)*, 4.7 *(7.5)*, 7.3 *(11.7)* **Clutch** single dry disc operated by foot pedal **Brakes** caliper disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 175" *(4.45 m)* left 154" *(3.91 m)*(on concrete surface without brake) right 192" *(4.88 m)* left 167" *(4.24 m)* **Turning space diameter** (on concrete surface with brake applied) right 362" *(9.19 m)* left 320" *(8.13 m)*(on concrete surface without brake) right 396" *(10.06 m)* left 346" *(8.79 m)* **Power take-off** 540 rpm at 2202 engine rpm **Unladen tractor mass** 7080 lb *(3211 kg)*.

LUGGING ABILITY IN 4th (1H) GEAR

Crankshaft Speed rpm	2500	2260	1999	1750	1488	1245
Pull—lbs *(kN)*	4138 *(18.41)*	4506 *(20.04)*	4829 *(21.48)*	5003 *(22.25)*	5014 *(22.30)*	4867 *(21.65)*
Increase in Pull %	0	9	17	21	21	18
Power—Hp *(kW)*	50.73 *(37.83)*	49.59 *(36.98)*	46.74 *(34.85)*	42.24 *(31.50)*	35.97 *(26.82)*	29.29 *(21.84)*
Speed—Mph *(km/h)*	4.60 *(7.40)*	4.13 *(6.64)*	3.63 *(5.84)*	3.17 *(5.09)*	2.69 *(4.33)*	2.26 *(3.63)*
Slip %	6.24	6.86	7.36	7.72	7.72	7.72

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Engaged dB(A)
Maximum Available Power—Two Hours	82.5	82.5
75% of Pull at Maximum Power—Ten Hours		83.0
50% of Pull at Maximum Power—Two Hours		82.5
50% of Pull at Reduced Engine Speed—Two Hours		79.0
Bystander in 7th (3H) gear	85.5	

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power - Two Hours 4th (1H) Gear											
48.05 *(35.83)*	4109 *(18.28)*	4.39 *(7.06)*	2499	9.28	3.879 *(14.684)*	0.566 *(0.344)*	12.39 *(2.440)*	200 *(93.1)*	49 *(9.4)*	56 *(13.3)*	29.19 *(98.57)*
MAXIMUM POWER IN SELECTED GEARS											
36.18 *(26.98)*	5587 *(24.85)*	2.43 *(3.91)*	2576	14.84	2nd (2L) Gear			159 *(70.3)*	41 *(5.0)*	49 *(9.4)*	29.06 *(98.13)*
49.38 *(36.82)*	4216 *(18.75)*	4.39 *(7.07)*	2500	9.28	4th (1H) Gear			195 *(90.3)*	50 *(10.0)*	56 *(13.3)*	29.20 *(98.60)*
49.38 *(36.82)*	3099 *(13.78)*	5.98 *(9.62)*	2502	6.16	5th (4L) Gear			193 *(89.2)*	50 *(10.0)*	55 *(12.8)*	29.20 *(98.60)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Two 16.9-30; 6; 18 *(125)*	Two 16.9-30; 6; 18 *(125)*
Ballast	—Liquid (each)	640 lb *(290 kg)*	None
	—Cast Iron (each)	110 lb *(50 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 11.2-24; 8; 18 *(125)*	Two 11.2-24; 8; 18 *(125)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	15 lb *(7 kg)*	None
Height of Drawbar		17.5 in *(445 mm)*	17.5 in *(445 mm)*
Static Weight with Operator	—Rear	5660 lb *(2567 kg)*	4160 lb *(1887 kg)*
	—Front	3130 lb *(1420 kg)*	3100 lb *(1406 kg)*
	—Total	8790 lb *(3987 kg)*	7260 lb *(3293 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 136°F *(57.7°C)*. Five gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. The cooling air temperature was measured in the airstream between the two rearmost cylinders.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1574**, October 30, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
T. L. THOMPSON
L. L. BASHFORD
Board of Tractor Test Engineers

NEBRASKA TRACTOR TEST 1575—DEUTZ-FAHR DX 4.70 DIESEL 15 SPEED

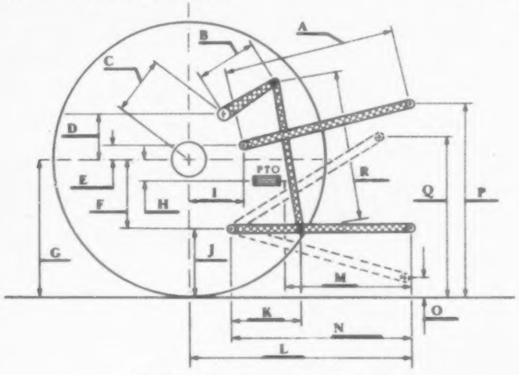
THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2650	*(18270)*	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	175	*(79)*	
Location	dipstick		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	4646	*(2107)*	
TIME sec	1.48		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	13.3	*(338)*	
Top of timed range	33.3	*(846)*	
Highest position	** 33.8	*(859)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.3	*(338)*	
Top of timed range	33.4	*(848)*	
Highest position	33.9	*(861)*	

*Implement load capacity for transport purposes not specified by manufacturer

** The observed power range, 20.5 in *(521 mm)* is less than the minimum power range for Cat II, 24 in *(610 mm)* specified by ASAE Standard S217.10

** The observed highest position, 33.8 in *(859 mm)* is less than the minimum height for highest position for Cat II, 36 in *(914 mm)* specified by ASAE Standard S217.10



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	27.0	*686*
B	11.0	*280*
C	12.4	*316*
D	12.3	*312*
E	13.4	*340*
F	6.5	*165*
G	26.1	*663*
H	1.7	*42*
I	11.9	*303*
J	19.6	*498*
K	25.0	*636*
L	39.1	*993*
M	22.3	*566*
N	35.6	*905*
O	8.0	*203*
P	38.6	*981*
Q	32.3	*819*
R	27.4	*695*

Deutz-Fahr DX 3.50 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1039 rpm)								
85.18 *(63.52)*	2300	5.162 *(19.540)*	0.425 *(0.258)*	16.50 *(3.251)*	189 *(87.0)*	66 *(19.0)*	75 *(23.8)*	29.15 *(98.44)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
84.35 *(62.90)*	2215	4.993 *(18.900)*	0.415 *(0.252)*	16.89 *(3.328)*	191 *(88.2)*	66 *(19.0)*	75 *(23.8)*	29.15 *(98.44)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
74.25 *(55.37)*	2358	4.561 *(17.264)*	0.431 *(0.262)*	16.28 *(3.207)*	178 *(81.1)*	66 *(18.9)*	75 *(23.6)*	—
0.00 *(0.00)*	2474	1.198 *(4.535)*	—	—	156 *(68.9)*	66 *(18.6)*	74 *(23.3)*	—
37.66 *(28.08)*	2395	2.858 *(10.819)*	0.532 *(0.324)*	13.18 *(2.596)*	162 *(71.9)*	66 *(18.9)*	77 *(24.7)*	—
85.46 *(63.73)*	2301	5.185 *(19.629)*	0.425 *(0.259)*	16.48 *(3.247)*	184 *(84.4)*	67 *(19.2)*	77 *(25.0)*	—
19.04 *(14.20)*	2420	1.947 *(7.369)*	0.717 *(0.436)*	9.78 *(1.927)*	154 *(67.5)*	66 *(18.9)*	75 *(23.6)*	—
56.07 *(41.81)*	2374	3.667 *(13.879)*	0.459 *(0.279)*	15.29 *(3.012)*	168 *(75.6)*	67 *(19.2)*	75 *(23.9)*	—
Av 45.41 **Av *(33.86)***	**2387**	**3.236** ***(12.249)***	**0.500** ***(0.304)***	**14.03** ***(2.765)***	**167** ***(74.9)***	**66** ***(18.9)***	**75** ***(24.0)***	**29.11** ***(98.30)***

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (3M) Gear											
73.23 *(54.61)*	5346 *(23.78)*	5.14 *(8.27)*	2301	4.65	5.084 *(19.246)*	0.487 *(0.296)*	14.40 *(2.837)*	189 *(87.2)*	74 *(23.1)*	84 *(28.6)*	28.84 *(97.39)*
75% of Pull at Maximum Power — Ten Hours 8th (3M) Gear											
58.58 *(43.68)*	4097 *(18.22)*	5.36 *(8.63)*	2366	3.19	4.256 *(16.109)*	0.509 *(0.310)*	13.76 *(2.712)*	175 *(79.6)*	73 *(22.9)*	83 *(28.2)*	28.81 *(97.27)*
50% of Pull at Maximum Power — Two Hours 8th (3M) Gear											
39.72 *(29.62)*	2732 *(12.15)*	5.45 *(8.77)*	2379	2.06	3.309 *(12.524)*	0.584 *(0.355)*	12.00 *(2.365)*	164 *(73.1)*	73 *(22.5)*	81 *(26.9)*	28.62 *(96.65)*
50% of Pull at Reduced Engine Speed — Two Hours 11th (2H) Gear											
39.73 *(29.62)*	2731 *(12.15)*	5.45 *(8.78)*	1477	2.01	2.660 *(10.068)*	0.469 *(0.286)*	14.94 *(2.942)*	180 *(82.2)*	74 *(23.3)*	84 *(28.6)*	28.61 *(96.61)*
MAXIMUM POWER IN SELECTED GEARS											
64.67 *(48.22)*	10502 *(46.71)*	2.31 *(3.72)*	2345	13.05	3rd (3L) Gear			172 *(77.5)*	67 *(19.4)*	74 *(23.3)*	28.85 *(97.42)*
71.93 *(53.64)*	9507 *(42.29)*	2.84 *(4.57)*	2300	10.39	4th (1M) Gear			169 *(76.1)*	67 *(19.4)*	70 *(21.1)*	28.63 *(96.68)*
74.73 *(55.73)*	8071 *(35.90)*	3.47 *(5.59)*	2299	8.06	5th (4L) Gear			169 *(75.8)*	67 *(19.4)*	71 *(21.7)*	28.63 *(96.68)*
74.43 *(55.50)*	7024 *(31.24)*	3.97 *(6.39)*	2298	6.59	6th (2M) Gear			171 *(76.9)*	68 *(20.0)*	72 *(22.2)*	28.63 *(96.68)*
73.72 *(54.97)*	6340 *(28.20)*	4.36 *(7.02)*	2298	5.84	7th (5L) Gear			174 *(78.6)*	68 *(20.0)*	73 *(22.8)*	28.63 *(96.68)*
74.62 *(55.64)*	5463 *(24.30)*	5.12 *(8.24)*	2300	5.00	8th (3M) Gear			177 *(80.6)*	70 *(21.1)*	75 *(23.9)*	28.63 *(96.68)*
74.16 *(55.30)*	4496 *(20.00)*	6.19 *(9.96)*	2297	3.83	9th (1H) Gear			179 *(81.7)*	70 *(21.1)*	76 *(24.4)*	28.64 *(96.71)*
75.13 *(56.02)*	3725 *(16.57)*	7.56 *(12.17)*	2300	3.11	10th (4M) Gear			182 *(83.3)*	70 *(21.1)*	77 *(25.0)*	28.64 *(96.71)*
72.42 *(54.01)*	3219 *(14.32)*	8.44 *(13.58)*	2299	2.71	11th (2H) Gear			182 *(83.1)*	71 *(21.7)*	78 *(25.6)*	28.64 *(96.71)*

Department of Agricultural Engineering

Dates of Test: September 10 to 19, 1985

Manufacturer: KLOCKNER-HUMBOLDT-DEUTZ AG, 5000 Cologne 80, West Germany

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8422 **Fuel weight** 7.012 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W-40 **API service classification** CD-SF **To motor** 3.189 gal *(12.071 l)* **Drained from motor** 1.646 gal *(6.232 l)* **Transmission lubricant** SAE 15W-40 engine oil **Front axle lubricant** SAE 90 EP transmission oil **Total time engine was operated** 42.5 hours.

ENGINE: Make Klockner-Humboldt-Deutz Diesel **Type** four cylinder vertical with turbocharger **Serial No.** 7014970 **Crankshaft** lengthwise **Rated rpm** 2300 **Bore and stroke** 4.02" × 4.92" *(102 mm × 125 mm)* **Compression ratio** 15.5 to 1 **Displacement** 249 cu in *(4085 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element and one felt element **Oil filter** one full flow cartridge **Oil cooler** radiator for crankcase oil, radiator for hydraulic oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** variable speed fan controlled by exhaust temperature sensor.

CHASSIS: Type front wheel assist **Serial No.** 7435 1636 **Tread width** rear 63" *(1600 mm)* to 78.7" *(2000 mm)* front 63" *(1600 mm)* to 70.9" *(1800 mm)* **Wheel base** 94.5" *(2400 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 32.5" *(825 mm)* Vertical distance above roadway 37.0" *(939 mm)* Horizontal distance from center of rear wheel tread 0.5" *(13 mm)* to the left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 1.6 *(2.5)* second 2.1 *(3.3)* third 2.6 *(4.2)* fourth 3.2 *(5.1)* fifth 3.8 *(6.1)* sixth 4.3 *(6.9)* seventh 4.6 *(7.4)* eighth 5.4 *(8.7)* ninth 6.4 *(10.3)* tenth 7.8 *(12.5)* eleventh 8.7 *(14.0)* twelfth 9.6 *(15.5)* thirteenth 10.9 *(17.6)* fourteenth 16.2 *(26.1)* fifteenth 19.5 *(31.3)* reverse 3.0 *(4.8)*, 4.0 *(6.4)*, 5.0 *(8.1)*, 7.3 *(11.7)*, 9.0 *(14.5)* **Clutch** single dry disc operated by foot pedal **Brakes** caliper disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 152" *(3.87 m)* left 151" *(3.83 m)*(on concrete surface without brake) right 178" *(4.53 m)* left 178" *(4.51 m)* **Turning space diameter** (on concrete surface with brake applied) right 331" *(8.42 m)* left 328" *(8.34 m)*(on concrete surface without brake) right 383" *(9.74 m)* left 382" *(9.70 m)* **Power take-off** 540 rpm at 2192 engine rpm and 1000 rpm at 2215 engine rpm **Unladen tractor mass** 9900 lb *(4491 kg)*.

LUGGING ABILITY IN 8th (3M) GEAR

Crankshaft Speed rpm	2300	2069	1833	1610	1379	1151
Pull—lbs	5463	5874	6179	6231	6022	5590
(kN)	*(24.30)*	*(26.13)*	*(27.49)*	*(27.72)*	*(26.79)*	*(24.87)*
Increase in Pull %	0	8	13	14	10	2
Power—Hp	74.62	71.79	66.71	59.06	49.01	38.15
(kW)	*(55.64)*	*(53.54)*	*(49.75)*	*(44.04)*	*(36.54)*	*(28.45)*
Speed—Mph	5.12	4.58	4.05	3.55	3.05	2.56
(km/h)	*(8.24)*	*(7.38)*	*(6.52)*	*(5.72)*	*(4.91)*	*(4.12)*
Slip %	5.00	5.38	5.69	5.69	5.54	5.03

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Available Power—Two Hours	79.5	78.5
75% of Pull at Maximum Power—Ten Hours		79.5
50% of Pull at Maximum Power—Two Hours		79.0
50% of Pull at Reduced Engine Speed—Two Hours		75.0
Bystander in 14th (4H) gear	84.0	

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cooling med	Temp. °F (°C) Air wet bulb	Temp. °F (°C) Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (3M) Gear											
72.06	5464	4.95	2299	7.52	5.127	0.499	14.05	183	70	78	28.84
(53.73)	*(24.31)*	*(7.96)*			*(19.408)*	*(0.303)*	*(2.769)*	*(83.9)*	*(20.8)*	*(25.3)*	*(97.39)*

MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %		Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
61.43	8417	2.74	2350	14.74	4th (1M) Gear	169	68	75	28.84
(45.81)	*(37.44)*	*(4.40)*				*(75.8)*	*(20.0)*	*(23.9)*	*(97.39)*
73.84	5599	4.95	2299	7.38	8th (3M) Gear	173	69	74	28.63
(55.06)	*(24.91)*	*(7.96)*				*(78.3)*	*(20.6)*	*(23.3)*	*(96.68)*
73.72	4594	6.02	2299	5.82	9th (1H) Gear	180	70	77	28.64
(54.97)	*(20.44)*	*(9.68)*				*(81.9)*	*(21.1)*	*(25.0)*	*(96.71)*
74.24	3778	7.37	2299	4.91	10th (4M) Gear	181	70	77	28.64
(55.36)	*(16.81)*	*(11.86)*				*(82.5)*	*(21.1)*	*(25.0)*	*(96.71)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-38; 6; 16 *(110)*	Two 18.4-38; 6; 16 *(110)*
Ballast	—Liquid (each)	1037 lb *(470 kg)*	None
	—Cast Iron (each)	105 lb *(48 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 13.6-28; 6; 16 *(110)*	Two 13.6-28; 6; 16 *(110)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	648 lb *(294 kg)*	None
Height of Drawbar		20.5 in *(520 mm)*	20.5 in *(520 mm)*
Static Weight with Operator	—Rear	8965 lb *(4066 kg)*	6680 lb *(3030 kg)*
	—Front	4695 lb *(2130 kg)*	3400 lb *(1542 kg)*
	—Total	13660 lb *(6196 kg)*	10080 lb *(4572 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2600	*(17930)*
Location	remote outlet	
Hydraulic oil temperature °F *(°C)*	151	*(66)*
Location	dipstick	

	Maximum Lift Capacity (With one boost cylinder)		Maximum Lift Capacity (With optional 2nd boost cylinder)		Lift Capacity for Transport
QUICK ATTACH	no		no		
CATEGORY	II		II		*not measured
LOAD lbs *(kg)*	5404	*(2451)*	7170	*(3252)*	
TIME sec	2.62		3.34		
HITCH POINT MOVEMENT in *(mm)*					
Lowest position	12.1	*(307)*	12.2	*(310)*	
Top of timed range	36.1	*(917)*	36.2	*(919)*	
Highest position	36.4	*(925)*	36.5	*(927)*	
LOAD CG MOVEMENT in *(mm)*					
Lowest position	11.8	*(300)*	12.1	*(307)*	
Top of timed range	37.8	*(960)*	38.0	*(965)*	
Highest position	38.2	*(970)*	38.2	*(970)*	

*Implement load capacity for transport purposes not specified by manufacturer

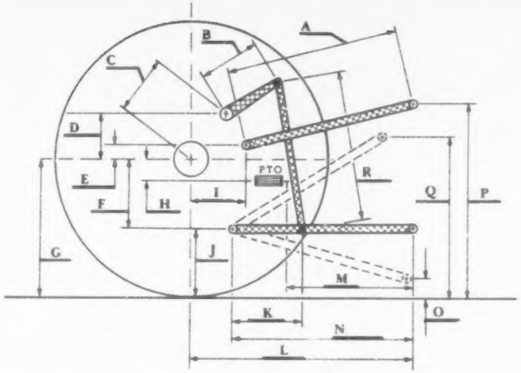
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 108°F *(42.5°C)*. Nine gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. The pull in 3rd (3L) gear was limited to avoid tractor bouncing. The cooling air temperature was measured in the airstream between the two rearmost cylinders.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1575**, October 30,1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
T. L. THOMPSON
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	27.8	*705*
B	12.6	*320*
C	16.9	*428*
D	16.2	*412*
E	7.8	*197*
F	10.2	*260*
G	31.2	*793*
H	6.5	*164*
I	14.7	*374*
J	21.0	*533*
K	22.4	*568*
L	42.8	*1087*
M	22.1	*562*
N	37.0	*940*
O	8.0	*203*
P	40.0	*1016*
Q	34.5	*876*
R	33.3	*845*

Deutz-Fahr DX 4.70 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1576—DEUTZ-FAHR DX 6.50 DIESEL 24 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed—1039 rpm)									
	122.06 *(91.02)*	2300	7.410 *(28.049)*	0.426 *(0.259)*	16.47 *(3.245)*	200 *(93.5)*	65 *(18.3)*	75 *(24.0)*	29.13 *(98.37)*
Standard Power Take-off Speed (1000 rpm) — One Hour									
	123.15 *(91.84)*	2215	7.181 *(27.183)*	0.409 *(0.249)*	17.15 *(3.378)*	203 *(94.8)*	66 *(18.6)*	75 *(23.6)*	29.04 *(98.06)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	107.32 *(80.03)*	2379	6.767 *(25.618)*	0.442 *(0.269)*	15.86 *(3.124)*	195 *(90.3)*	66 *(18.6)*	75 *(23.9)*	......
	0.00 *(0.00)*	2468	1.660 *(6.283)*	—	—	188 *(86.7)*	66 *(18.9)*	75 *(23.6)*	—
	54.68 *(40.78)*	2425	4.342 *(16.436)*	0.557 *(0.339)*	12.59 *(2.481)*	168 *(75.3)*	67 *(19.2)*	75 *(23.6)*	—
	122.59 *(91.42)*	2300	7.375 *(27.917)*	0.422 *(0.257)*	16.62 *(3.275)*	192 *(88.9)*	66 *(18.9)*	75 *(23.6)*	—
	27.61 *(20.59)*	2452	3.183 *(12.048)*	0.808 *(0.492)*	8.68 *(1.709)*	171 *(76.9)*	66 *(18.9)*	76 *(24.2)*	—
	81.50 *(60.77)*	2406	5.553 *(21.019)*	0.478 *(0.291)*	14.68 *(2.891)*	175 *(79.2)*	66 *(18.9)*	75 *(23.6)*	—
Av **Av**	**63.62** ***(48.93)***	**2405**	**4.813** ***(18.220)***	**0.514** ***(0.313)***	**13.63** ***(2.686)***	**181** ***(82.9)***	**66** ***(18.9)***	**75** ***(23.8)***	**29.08** ***(98.20)***

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 13th (3ML) Gear											
104.05 *(77.59)*	7719 *(34.34)*	5.05 *(8.13)*	2300	5.83	7.329 *(27.744)*	0.494 *(0.300)*	14.20 *(2.797)*	192 *(88.9)*	67 *(19.2)*	70 *(20.8)*	28.79 *(97.20)*
75% of Pull at Maximum Power — Ten Hours 13th (3ML) Gear											
83.93 *(62.59)*	5858 *(26.06)*	5.37 *(8.65)*	2406	4.31	6.465 *(24.473)*	0.540 *(0.329)*	12.98 *(2.557)*	162 *(71.9)*	52 *(11.3)*	53 *(11.9)*	29.30 *(98.95)*
50% of Pull at Maximum Power — Two Hours 13th (3ML) Gear											
57.24 *(42.68)*	3906 *(17.37)*	5.50 *(8.84)*	2421	2.69	5.041 *(19.081)*	0.618 *(0.376)*	11.36 *(2.237)*	159 *(70.3)*	60 *(15.6)*	62 *(16.7)*	29.10 *(98.25)*
50% of Pull at Reduced Engine Speed — Two Hours 19th (4MH) Gear											
57.25 *(42.69)*	3907 *(17.38)*	5.50 *(8.84)*	1397	2.69	3.843 *(14.547)*	0.471 *(0.286)*	14.90 *(2.935)*	183 *(83.9)*	61 *(16.1)*	63 *(17.2)*	29.08 *(98.18)*

Department of Agricultural Engineering

Dates of Test: September 9 to 17, 1985

Manufacturer: KLOCKNER-HUMBOLDT-DEUTZ AG, 5000 Cologne 80, West Germany

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8423 **Fuel weight** 7.013 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W-40 **API service classification** CD-SF **To motor** 4.800 gal *(18.169 l)* **Drained from motor** 3.570 gal *(13.514 l)* **Transmission lubricant** SAE 15W-40 engine oil **Front axle lubricant** SAE 90 EP transmission oil **Total time engine was operated** 44.5 hours.

ENGINE: Make Klockner-Humboldt-Deutz Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 7994949 **Crankshaft** lengthwise **Rated rpm** 2300 **Bore and stroke** 4.02" × 4.92" *(102 mm × 125 mm)* **Compression ratio** 15.5 to 1 **Displacement** 374 cu in *(6128 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** one full flow cartridge **Oil cooler** radiator for crankcase oil, radiator for hydraulic oil, radiator for transmission oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** variable speed fan controlled by exhaust temperature sensor.

CHASSIS: Type front wheel assist **Serial No.** 7441 0761 **Tread width** rear 70.9" *(1800 mm)* to 86.6" *(2200 mm)* front 70.9" *(1800 mm)* to 78.7" *(2000 mm)* **Wheel base** 106.4" *(2703 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 36.8" *(934 mm)* Vertical distance above roadway 39.6" *(1006 mm)* Horizontal distance from center of rear wheel tread 0.1" *(3 mm)* to the left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Advertised speeds mph *(km/h)*** first 1.5 *(2.4)* second 1.8 *(2.9)* third 2.0 *(3.2)* fourth 2.4 *(3.9)* fifth 2.5 *(4.1)* sixth 3.0 *(4.9)* seventh 3.2 *(5.1)* eighth 3.6 *(5.8)* ninth 3.7 *(6.0)* tenth 4.0 *(6.5)* eleventh 4.5 *(7.2)* twelfth 5.0 *(8.1)* thirteenth 5.3 *(8.6)* fourteenth 6.2 *(9.9)* fifteenth 6.6 *(10.6)* sixteenth 7.5 *(12.0)* seventeenth 7.6 *(12.2)* eighteenth 8.3 *(13.3)* nineteenth 9.2 *(14.8)* twentieth 10.3 *(16.5)* twenty-first 10.8 *(17.4)* twenty-second 13.4 *(21.6)* twenty-third 15.5 *(25.0)* twenty-fourth 18.6 *(30.0)* reverse 2.8 *(4.5)*, 3.5 *(5.6)*, 3.8 *(6.1)*, 4.7 *(7.6)*, 5.0 *(8.0)* 6.2 *(9.9)*, 7.0 *(11.2)*, 8.6 *(13.9)*, **Clutch** dual dry disc hydraulically power actuated by foot pedal **Brakes** caliper disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 161" *(4.09 m)* left 161" *(4.09 m)*(on concrete surface without brake) right 183.5" *(4.66 m)* left 183.5" *(4.66 m)* **Turning space diameter** (on concrete surface with brake applied) right 339" *(8.61 m)* left 339" *(8.61 m)*(on concrete surface without brake) right 384" *(9.75 m)* left 384" *(9.75 m)* **Power take-off** 540 rpm at 2192 engine rpm and 1000 rpm at 2215 engine rpm **Unladen tractor mass** 11950 lb *(5421 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 125 °F *(51.6°C)*. Thirteen gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. The cooling air temperature was measured in the airstream between the two rearmost cylinders.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1576**, October 30, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
T. L. THOMPSON
L. L. BASHFORD
Board of Tractor Test Engineers

MAXIMUM POWER IN SELECTED GEARS

95.79 *(71.43)*	13633 *(60.64)*	2.63 *(4.24)*	2334	14.87	6th (1ML) Gear	181 *(82.8)*	63 *(17.2)*	65 *(18.3)*	28.81 *(97.29)*
98.36 *(73.35)*	13344 *(59.36)*	2.76 *(4.45)*	2298	13.89	7th (3LH) Gear	183 *(83.9)*	64 *(17.8)*	66 *(18.9)*	28.81 *(97.29)*
100.26 *(74.77)*	11509 *(51.19)*	3.27 *(5.26)*	2299	10.11	8th (4LL) Gear	184 *(84.2)*	64 *(17.8)*	67 *(19.4)*	28.81 *(97.29)*
101.18 *(75.45)*	11133 *(49.52)*	3.41 *(5.49)*	2301	9.53	9th (1MH) Gear	184 *(84.2)*	65 *(18.3)*	67 *(19.4)*	28.80 *(97.25)*
102.62 *(76.52)*	10264 *(45.66)*	3.75 *(6.03)*	2300	8.50	10th (2ML) Gear	186 *(85.6)*	65 *(18.3)*	67 *(19.4)*	28.80 *(97.25)*
102.09 *(76.13)*	9177 *(40.82)*	4.17 *(6.71)*	2300	7.07	11th (4LH) Gear	188 *(86.7)*	65 *(18.3)*	67 *(19.4)*	28.80 *(97.25)*
103.77 *(77.38)*	8180 *(36.39)*	4.76 *(7.66)*	2300	6.14	12th (2MH) Gear	189 *(87.2)*	65 *(18.3)*	68 *(20.0)*	28.79 *(97.22)*
105.49 *(78.66)*	7811 *(34.75)*	5.06 *(8.15)*	2299	5.67	13th (3ML) Gear	185 *(85.0)*	58 *(14.4)*	62 *(16.7)*	29.10 *(98.27)*
103.81 *(77.41)*	6577 *(29.26)*	5.92 *(9.53)*	2299	4.55	14th (1HL) Gear	183 *(83.9)*	58 *(14.4)*	62 *(16.7)*	29.10 *(98.27)*
105.04 *(78.33)*	6191 *(27.54)*	6.36 *(10.24)*	2299	4.22	15th (3MH) Gear	184 *(84.4)*	58 *(14.4)*	62 *(16.7)*	29.11 *(98.30)*
102.15 *(76.17)*	5283 *(23.50)*	7.25 *(11.67)*	2300	3.49	16th (4ML) Gear	181 *(82.8)*	58 *(14.4)*	62 *(16.7)*	29.11 *(98.30)*
102.52 *(76.45)*	5189 *(23.08)*	7.41 *(11.92)*	2300	3.32	17th (1HH) Gear	181 *(82.5)*	58 *(14.4)*	62 *(16.7)*	29.12 *(98.33)*
101.81 *(75.92)*	4724 *(21.01)*	8.08 *(13.01)*	2300	3.24	18th (2HL) Gear	182 *(83.1)*	59 *(15.0)*	62 *(16.7)*	29.12 *(98.33)*

LUGGING ABILITY IN 13th (3ML) GEAR

Crankshaft Speed rpm	2299	2072	1838	1609	1387	1156
Pull—lbs *(kN)*	7811 *(34.75)*	9222 *(41.02)*	10130 *(45.06)*	10379 *(46.17)*	9980 *(44.39)*	9218 *(41.00)*
Increase in Pull %	0	18	30	33	28	18
Power—Hp *(kW)*	105.49 *(78.66)*	110.85 *(82.66)*	106.82 *(79.65)*	95.41 *(71.15)*	79.47 *(59.26)*	61.70 *(46.01)*
Speed—Mph *(km/h)*	5.06 *(8.15)*	4.51 *(7.25)*	3.95 *(6.36)*	3.45 *(5.55)*	2.99 *(4.81)*	2.51 *(4.04)*
Slip %	5.67	6.76	7.83	8.28	7.68	7.07

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Available Power—Two Hours	79.5	79.5
75% of Pull at Maximum Power—Ten Hours		79.0
50% of Pull at Maximum Power—Two Hours		78.5
50% of Pull at Reduced Engine Speed—Two Hours		77.0
Bystander in 23rd (4HL) gear	87.0	

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 13th (3ML) Gear											
101.36 *(75.59)*	7818 *(34.77)*	4.86 *(7.83)*	2300	9.16	7.336 *(27.771)*	0.508 *(0.309)*	13.82 *(2.722)*	195 *(90.3)*	68 *(20.0)*	72 *(21.9)*	28.75 *(97.07)*

MAXIMUM POWER IN SELECTED GEARS

93.99 *(70.09)*	10734 *(47.75)*	3.28 *(5.28)*	2365	14.93	9th (1MH) Gear	185 *(85.0)*	65 *(18.3)*	67 *(19.4)*	28.80 *(97.25)*
103.56 *(77.23)*	7919 *(35.23)*	4.90 *(7.89)*	2302	8.39	13th (3ML) Gear	184 *(84.4)*	58 *(14.4)*	62 *(16.7)*	29.10 *(98.27)*
103.63 *(77.27)*	6267 *(27.88)*	6.20 *(9.98)*	2299	6.34	15th (3MH) Gear	181 *(82.8)*	58 *(14.4)*	62 *(16.7)*	29.11 *(98.30)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 20.8-38, 8, 18 (125)	Two 20.8-38, 8, 18 (125)
Ballast	—Liquid (each)	950 lb (431 kg)	None
	—Cast Iron (each)	962 lb (436 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 16.9-28, 6, 18 (125)	Two 16.9-28, 6, 18 (125)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	812 lb (369 kg)	None
Height of Drawbar		26 in (660 mm)	26 in (660 mm)
Static Weight with Operator—Rear		11800 lb (5352 kg)	7960 lb (3611 kg)
—Front		5795 lb (2629 kg)	4170 lb (1891 kg)
—Total		17595 lb (7981 kg)	12130 lb (5502 kg)

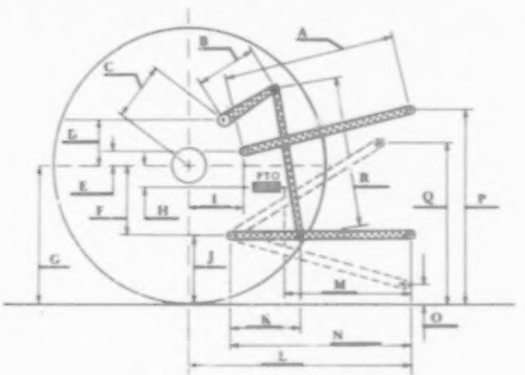
THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2675	(18440)	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	147	(64)	
Location	dipstick		
	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	no		
CATEGORY	III		*not measured
LOAD lbs (kg)	8958	(4068)	
TIME sec	3.35		
HITCH POINT MOVEMENT in (mm)			
Lowest position	10.7	(272)	
Top of timed range	33.7	(856)	
Highest position	** 34.1	(866)	
LOAD CG MOVEMENT in (mm)			
Lowest position	10.5	(267)	
Top of timed range	35.7	(907)	
Highest position	36.3	(922)	

*Implement load capacity for transport purposes not specified by manufacturer

** The observed power range, 23.4 in. (594 mm) is less than the minimum power range for Cat III, 26 in. (660 mm) specified by ASAE Standard S217.10

** The observed highest position, 34.1 in. (866 mm) is less than the minimum height for highest position for Cat III, 40 in. (1016 mm) specified by ASAE Standard S217.10



Hitch Dimensions as Tested — No Load

	inch	mm
A	27.0	686
B	12.6	320
C	16.9	428
D	16.2	412
E	9.7	247
F	10.2	260
G	32.5	825
H	6.5	164
I	14.7	374
J	22.3	565
K	23.8	605
L	43.4	1102
M	22.6	575
N	37.6	955
O	8.0	203
P	44.3	1124
Q	34.5	876
R	34.6	879

Deutz-Fahr DX 6.50 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1573—FORD 2810 (8×2) DIESEL

8 speed

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —600 rpm)								
32.83 (24.48)	2000	2.217 (8.393)	0.474 (0.288)	14.81 (2.917)	188 (86.7)	63 (17.4)	75 (23.9)	28.99 (97.91)
Standard Power Take-off Speed (540 rpm) — One Hour								
31.82 (23.73)	1600	2.093 (7.924)	0.461 (0.281)	15.20 (2.994)	188 (86.9)	63 (17.2)	75 (23.6)	29.00 (97.93)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
28.55 (21.29)	2047	1.995 (7.546)	0.490 (0.298)	14.32 (2.821)	185 (84.7)	63 (17.2)	75 (23.9)	—
0.00 (0.00)	2195	0.791 (2.994)	—	—	178 (81.1)	62 (16.9)	74 (23.3)	—
14.88 (11.09)	2152	1.377 (5.214)	0.649 (0.395)	10.80 (2.127)	182 (83.3)	62 (16.9)	74 (23.3)	—
32.91 (24.54)	2000	2.212 (8.372)	0.471 (0.287)	14.88 (2.931)	188 (86.6)	63 (17.2)	75 (23.6)	—
7.54 (5.62)	2161	1.060 (4.008)	0.994 (0.605)	7.03 (1.386)	182 (83.3)	63 (17.2)	75 (23.6)	—
21.94 (16.36)	2096	1.705 (6.455)	0.544 (0.331)	12.89 (2.539)	184 (84.4)	63 (17.2)	74 (23.3)	—
Av 17.64 Av (13.15)	2105	1.524 (5.770)	0.606 (0.369)	11.57 (2.279)	183 (83.8)	63 (17.1)	74 (23.5)	29.03 (98.04)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 5th Gear											
28.19 (21.02)	1795 (7.98)	5.89 (9.48)	1999	5.24	2.189 (8.285)	0.544 (0.331)	12.88 (2.537)	189 (87.2)	64 (17.5)	72 (21.9)	28.97 (97.85)
75% of Pull at Maximum Power — Ten Hours 5th Gear											
23.07 (17.20)	1395 (6.20)	6.21 (9.99)	2085	4.20	1.924 (7.282)	0.585 (0.356)	11.99 (2.362)	187 (86.1)	62 (16.8)	65 (18.2)	29.07 (98.16)
50% of Pull at Maximum Power — Two Hours 5th Gear											
15.90 (11.86)	929 (4.13)	6.42 (10.33)	2126	2.94	1.597 (6.045)	0.704 (0.428)	9.96 (1.962)	188 (86.7)	64 (17.8)	67 (19.2)	29.16 (98.47)
50% of Pull at Reduced Engine Speed — Two Hours 6th Gear											
15.91 (11.86)	929 (4.13)	6.42 (10.33)	1702	2.77	1.385 (5.243)	0.610 (0.371)	11.49 (2.265)	186 (85.6)	65 (18.3)	70 (21.1)	29.17 (98.51)
MAXIMUM POWER IN SELECTED GEARS											
20.56 (15.33)	4036 (17.95)	1.91 (3.07)	2066	14.81	2nd Gear			188 (86.7)	63 (17.2)	65 (18.3)	29.14 (98.40)
27.50 (20.51)	2987 (13.29)	3.45 (5.56)	1999	9.31	3rd Gear			188 (86.7)	62 (16.7)	69 (20.6)	28.98 (97.86)
28.15 (20.99)	2174 (9.67)	4.86 (7.82)	1998	6.35	4th Gear			188 (86.6)	62 (16.7)	69 (20.6)	29.00 (97.93)
29.14 (21.73)	1857 (8.26)	5.88 (9.47)	1998	5.35	5th Gear			189 (86.9)	63 (17.2)	71 (21.7)	28.97 (97.83)
28.59 (21.32)	1443 (6.42)	7.43 (11.96)	1998	4.15	6th Gear			188 (86.7)	62 (16.7)	69 (20.6)	28.98 (97.86)

Department of Agricultural Engineering

Dates of Test: September 6 to 11, 1985

Manufacturer: FORD MOTOR COMPANY, Ford Tractor Operations, 2500 Maple Road, Troy, Michigan 48084

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8425 **Fuel weight** 7.015 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W-40 **API service classification** SF, CD **To motor** 1.383 gal *(5.234 l)* **Drained from motor** 1.232 gal *(4.663 l)* **Transmission and final drive lubricant** Ford M2C134B fluid **Total time engine was operated** 31.0 hours.

ENGINE: Make Ford Diesel **Type** three cylinder vertical **Serial No.** *B820799* **Crankshaft** lengthwise **Rated rpm** 2000 **Bore and stroke** 4.2" × 3.8" *(106.7 mm × 96.5 mm)* **Compression ratio** 17.5 to 1 **Displacement** 158 cu in *(2589 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow paper cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard **Serial No.** *C738090* **Tread width** rear 60" *(1524 mm)* to 80" *(2032 mm)* front 52" *(1320 mm)* to 80" *(2032 mm)* **Wheel base** 77.5" *(1969 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 28.5" *(724 mm)* Vertical distance above roadway 28.1" *(714 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.7 *(2.8)* second 2.2 *(3.5)* third 3.8 *(6.0)* fourth 5.2 *(8.3)* fifth 6.2 *(9.9)* sixth 7.7 *(12.4)* seventh 13.5 *(21.8)* eighth 18.5 *(29.8)* reverse 2.5 *(4.0)*, 8.9 *(14.3)* **Clutch** single plate dry disc operated by foot pedal **Brakes** wet multiple disc operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 114" *(2.89 m)* left 114" *(2.89 m)* (on concrete surface without brake) right 136" *(3.45 m)* left 136" *(3.45 m)* **Turning space diameter** (on concrete surface with brake applied) right 233" *(5.92 m)* left 233" *(5.92 m)* (on concrete surface without brake) right 275" *(6.98 m)* left 275" *(6.98 m)* **Power take-off** 540 rpm at 1800 engine rpm **Unladen tractor mass** 4465 lb *(2025 kg)*

LUGGING ABILITY IN 5th GEAR

Crankshaft Speed rpm	1998	1792	1598	1407	1209	1010
Pull—lbs (kN)	1857 *(8.26)*	1980 *(8.81)*	2075 *(9.23)*	2162 *(9.62)*	2190 *(9.74)*	2184 *(9.71)*
Increase in Pull %	0	7	12	16	18	18
Power—Hp (kW)	29.14 *(21.73)*	27.74 *(20.69)*	25.85 *(19.28)*	23.63 *(17.62)*	20.46 *(15.26)*	17.10 *(12.75)*
Speed—Mph (km/h)	5.88 *(9.47)*	5.25 *(8.46)*	4.67 *(7.51)*	4.10 *(6.60)*	3.50 *(5.64)*	2.93 *(4.71)*
Slip %	5.35	5.74	5.97	6.30	6.41	6.52

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours	96.0
75% of Pull at Maximum Power—Ten Hours	95.0
50% of Pull at Maximum Power—Two Hours	94.0
50% of Pull at Reduced Engine Speed—Two Hours	91.5
Bystander in 7th gear	84.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 13.6-28; 6; 14 (97)	Two 13.6-28; 6; 14 (97)
Ballast	—Liquid (each)	450 lb *(204 kg)*	None
	—Cast Iron (each)	150 lb *(68 kg)*	None
Front Tires	—No., size, ply & psi (kPa)	Two 6.00-16; 4; 36 (250)	Two 6.00-16; 4; 36 (250)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	47 lb *(21 kg)*	None
Height of Drawbar		17 in *(430 mm)*	17 in *(430 mm)*
Static Weight with Operator	—Rear	4135 lb *(1876 kg)*	2935 lb *(1331 kg)*
	—Front	1800 lb *(816 kg)*	1705 lb *(774 kg)*
	—Total	5935 lb *(2692 kg)*	4640 lb *(2105 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2525	*(17410)*	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	160	*(71)*	
Location	*final drive*		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs (kg)	2936	*(1332)*	
TIME sec	2.56		
HITCH POINT MOVEMENT in (mm)			
Lowest position	8.0	*(203)*	
Top of timed range	30.1	*(765)*	
Highest position	32.0	*(813)*	
LOAD CG MOVEMENT in (mm)			
Lowest position	7.4	*(188)*	
Top of timed range	33.6	*(853)*	
Highest position	36.1	*(917)*	

*Implement load capacity for transport purposes not specified by manufacturer

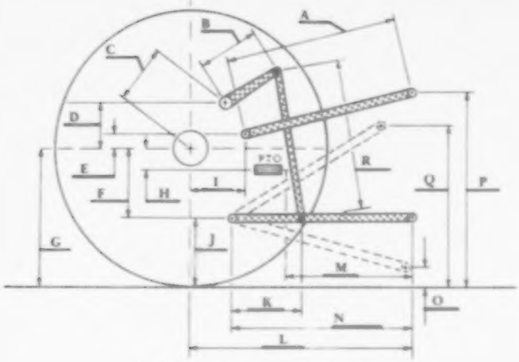
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 131°F *(55.1°C)*. Five gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1573**, October 29,1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
T. L. THOMPSON
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	25.9	*657*
B	10.0	*254*
C	12.9	*327*
D	10.1	*257*
E	7.5	*191*
F	8.0	*203*
G	23.6	*600*
H	4.7	*119*
I	8.7	*220*
J	15.6	*397*
K	17.2	*437*
L	34.2	*869*
M	18.3	*464*
N	31.5	*800*
O	8.0	*203*
P	33.6	*854*
Q	32.9	*835*
R	28.0	*711*

Ford 2810 Diesel

NEBRASKA TRACTOR TEST 1579—HESSTON 45-66DT FIAT DIESEL ALSO HESSTON 45-66 FIAT DIESEL

12 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed — 614 rpm)									
	39.49 *(29.45)*	2500	2.512 *(9.508)*	0.446 *(0.271)*	15.72 *(3.097)*	175 *(79.7)*	60 *(15.6)*	75 *(24.0)*	28.91 *(97.62)*
Standard Power Take-off Speed (540 rpm) — One Hour									
	37.97 *(28.31)*	2199	2.281 *(8.633)*	0.421 *(0.256)*	16.65 *(3.279)*	175 *(79.2)*	61 *(16.2)*	76 *(24.3)*	28.90 *(97.57)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	35.95 *(26.81)*	2678	2.413 *(9.136)*	0.471 *(0.286)*	14.90 *(2.934)*	175 *(79.2)*	61 *(16.1)*	75 *(23.9)*	—
	0.00 *(0.00)*	2759	0.941 *(3.564)*	—	—	171 *(77.2)*	61 *(15.8)*	74 *(23.3)*	—
	18.21 *(13.58)*	2712	1.613 *(6.107)*	0.621 *(0.378)*	11.29 *(2.224)*	172 *(77.8)*	61 *(15.8)*	74 *(23.3)*	—
	39.32 *(29.32)*	2501	2.507 *(9.492)*	0.447 *(0.272)*	15.68 *(3.089)*	176 *(79.7)*	61 *(16.1)*	75 *(23.9)*	—
	9.18 *(6.85)*	2736	1.267 *(4.795)*	0.967 *(0.588)*	7.25 *(1.428)*	171 *(77.2)*	62 *(16.4)*	75 *(23.9)*	—
	27.12 *(20.22)*	2693	1.977 *(7.485)*	0.511 *(0.311)*	13.72 *(2.702)*	173 *(78.3)*	62 *(16.7)*	76 *(24.2)*	—
Av ***Av***	**21.63** ***(16.13)***	**2680**	**1.786** ***(6.763)***	**0.579** ***(0.352)***	**12.11** ***(2.385)***	**173** ***(78.2)***	**61** ***(16.2)***	**75** ***(23.8)***	**28.87** ***(97.49)***

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-1) Gear											
31.21 *(23.27)*	2498 *(11.11)*	4.69 *(7.54)*	2499	7.87	2.525 *(9.557)*	0.567 *(0.345)*	12.36 *(2.435)*	177 *(80.6)*	57 *(13.9)*	63 *(17.2)*	28.66 *(96.76)*
75% of Pull at Maximum Power — Ten Hours 8th (III-1) Gear											
26.05 *(19.43)*	1908 *(8.49)*	5.12 *(8.24)*	2686	6.34	2.321 *(8.785)*	0.624 *(0.380)*	11.25 *(2.212)*	177 *(80.7)*	48 *(8.7)*	53 *(11.8)*	28.94 *(97.74)*
50% of Pull at Maximum Power — Two Hours 8th (III-1) Gear											
17.87 *(13.33)*	1272 *(5.66)*	5.27 *(8.48)*	2703	4.20	1.890 *(7.154)*	0.741 *(0.451)*	9.46 *(1.863)*	177 *(80.6)*	49 *(9.4)*	56 *(13.3)*	28.51 *(96.26)*
50% of Pull at Reduced Engine Speed — Two Hours 10th (III-2) Gear											
17.86 *(13.32)*	1271 *(5.65)*	5.27 *(8.48)*	1695	4.05	1.426 *(5.398)*	0.560 *(0.341)*	12.52 *(2.466)*	175 *(79.4)*	52 *(10.8)*	60 *(15.6)*	28.45 *(96.05)*
MAXIMUM POWER IN SELECTED GEARS											
30.64 *(22.85)*	4257 *(18.93)*	2.70 *(4.34)*	2500	14.95	6th (II-2) Gear			176 *(80.0)*	53 *(11.7)*	58 *(14.4)*	28.74 *(97.05)*
31.58 *(23.55)*	3273 *(14.56)*	3.62 *(5.82)*	2501	10.45	7th (II-3) Gear			177 *(80.3)*	54 *(12.2)*	60 *(15.6)*	28.72 *(96.98)*
31.74 *(23.67)*	2544 *(11.31)*	4.68 *(7.53)*	2499	7.95	8th (III-1) Gear			177 *(80.6)*	54 *(12.2)*	60 *(15.6)*	28.70 *(96.92)*
30.24 *(22.55)*	1871 *(8.32)*	6.06 *(9.75)*	2501	5.93	9th (II-4) Gear			177 *(80.6)*	55 *(12.8)*	60 *(15.6)*	28.69 *(96.88)*
29.59 *(22.07)*	1440 *(6.40)*	7.71 *(12.41)*	2499	4.73	10th (III-2) Gear			177 *(80.6)*	56 *(13.3)*	61 *(16.1)*	28.68 *(96.85)*
27.04 *(20.16)*	1020 *(4.54)*	9.94 *(16.00)*	2500	5.55	11th (III-3) Gear			177 *(80.6)*	56 *(13.3)*	61 *(16.1)*	28.68 *(96.85)*

Department of Agricultural Engineering

Dates of Test: October 1 to 8, 1985

Manufacturer: FIAT TRATTORI S.p.A. Via Picodella Mirandola 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8420 **Fuel weight** 7.011 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W40 **API service classification** SF-CD **To motor** 2.213 gal *(8.379 l)* **Drained from motor** 1.968 gal *(7.449 l)* **Transmission and final drive lubricant** Hesston M&PS 705106016 fluid **Total time engine was operated** 40.0 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** three cylinder vertical **Serial No.** 8035.06*206-012765 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.937" × 4.528" *(100 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 165 cu in *(2710 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 45-66DT/12*420690* **Tread width** rear 50.0" *(1270 mm)* to 60.2" *(1530 mm)* front 54.5" *(1380 mm)* to 71.6" *(1820 mm)* **Wheel base** 74.9" *(1902 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 31.9" *(810 mm)* Vertical distance above roadway 26.7" *(678 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 0.7 *(1.2)* second 1.1 *(1.8)* third 1.4 *(2.3)* fourth 1.9 *(3.0)* fifth 2.3 *(3.7)* sixth 2.9 *(4.7)* seventh 3.7 *(6.0)* eighth 4.7 *(7.6)* ninth 6.0 *(9.7)* tenth 7.5 *(12.1)* eleventh 9.6 *(15.5)* twelfth 15.2 *(24.5)* reverse 2.2 *(3.5)*, 3.4 *(5.4)*, 4.1 *(6.6)*, 6.5 *(10.5)* **Clutch** single dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 141" *(3.58 m)* left 141" *(3.58 m)*(on concrete surface without brake) right 158" *(4.01 m)* left 158" *(4.01 m)* **Turning space diameter** (on concrete surface with brake applied) right 290" *(7.37 m)* left 290" *(7.37 m)*(on concrete surface without brake) right 324" *(8.23 m)* left 324" *(8.23 m)* **Power take-off** 540 rpm at 2199 engine rpm **Unladen tractor mass** 4270 lb *(1937 kg)*.

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

LUGGING ABILITY IN 8th (III-1) GEAR

Crankshaft Speed rpm	2499	2250	2000	1750	1491	1244
Pull—lbs *(kN)*	2544 *(11.31)*	2796 *(12.44)*	3009 *(13.38)*	3160 *(14.06)*	3169 *(14.10)*	3120 *(13.88)*
Increase in Pull %	0	10	18	24	25	23
Power—Hp *(kW)*	31.74 *(23.67)*	31.15 *(23.23)*	29.59 *(22.07)*	27.04 *(20.16)*	23.09 *(17.22)*	19.00 *(14.17)*
Speed—Mph *(km/h)*	4.68 *(7.53)*	4.18 *(6.72)*	3.69 *(5.94)*	3.21 *(5.16)*	2.73 *(4.40)*	2.28 *(3.67)*
Slip %	7.95	8.73	9.41	9.98	9.88	9.88

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Disengaged dB(A)	 Engaged dB(A)
Maximum Available Power—Two Hours	95.0	95.0
75% of Pull at Maximum Power—Ten Hours		95.0
50% of Pull at Maximum Power—Two Hours		95.5
50% of Pull at Reduced Engine Speed—Two Hours		90.5
Bystander in 12th (III-4) gear	87.0	

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cooling med	Temp. °F (°C) Air wet bulb	Temp. °F (°C) Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-1) Gear											
31.27 *(23.32)*	2712 *(12.06)*	4.33 *(6.96)*	2499	11.08	2.517 *(9.530)*	0.564 *(0.343)*	12.42 *(2.447)*	177 *(80.6)*	59 *(14.7)*	70 *(20.9)*	28.65 *(96.75)*

MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
29.29 *(21.84)*	3148 *(14.00)*	3.49 *(5.62)*	2654	14.97	7th (II-3) Gear	176 *(80.0)*	53 *(11.7)*	59 *(15.0)*	28.73 *(97.02)*
31.71 *(23.65)*	2752 *(12.24)*	4.32 *(6.96)*	2501	11.25	8th (III-1) Gear	176 *(80.0)*	54 *(12.2)*	60 *(15.6)*	28.71 *(96.95)*
31.59 *(23.56)*	2083 *(9.27)*	5.69 *(9.15)*	2500	7.67	9th (II-4) Gear	176 *(80.0)*	55 *(12.8)*	60 *(15.6)*	28.69 *(96.88)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 12.4-24; 6; 20 *(140)*	Two 12.4-24; 6; 20 *(140)*
Ballast	—Liquid (each)	300 lb *(136 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 7.50-20; 6; 24 *(165)*	Two 7.50-20; 6; 24 *(165)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	175 lb *(79 kg)*	None
Height of Drawbar		16 in *(405 mm)*	16 in *(405 mm)*
Static Weight with Operator	—Rear	3200 lb *(1451 kg)*	2600 lb *(1179 kg)*
	—Front	2200 lb *(998 kg)*	1850 lb *(839 kg)*
	—Total	5400 lb *(2449 kg)*	4450 lb *(2018 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 152°F *(66.5°C)*. Six gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1579, December 6, 1985.

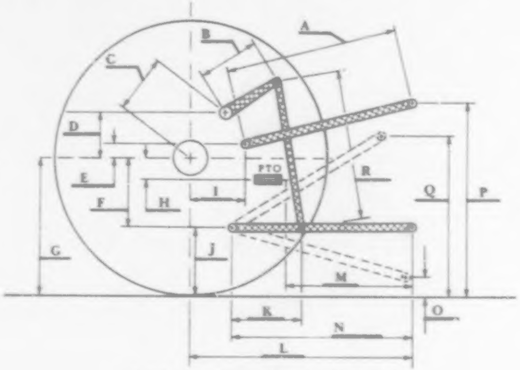
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2800	*(19310)*	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	170	*(77)*	
Location	hydraulic filter		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	3016	*(1368)*	
TIME sec	1.85		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	10.2	*(259)*	
Top of timed range	34.2	*(869)*	
Highest position	** 35.0	*(889)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	9.8	*(249)*	
Top of timed range	38.6	*(980)*	
Highest position	39.8	*(1011)*	

*Implement load capacity for transport purposes not specified by manufacturer.
** The observed highest position, 35.0 in. *(889 mm)* is less than the minimum height for highest position for Cat. II, 36 in. *(914 mm)* specified by ASAE Standard S217.10



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	27.0	*686*
B	9.0	*230*
C	10.2	*258*
D	10.1	*257*
E	10.8	*275*
F	5.9	*150*
G	20.9	*531*
H	0.5	*14*
I	4.8	*121*
J	15.0	*381*
K	14.5	*369*
L	32.1	*815*
M	23.0	*584*
N	32.7	*830*
O	8.0	*203*
P	34.0	*864*
Q	34.4	*873*
R	17.0	*432*

Hesston 45-66 DT Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1560—HESSTON 55-66 FIAT DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—614 rpm)								
45.78 (34.14)	2500	3.015 (11.413)	0.460 (0.280)	15.18 (2.991)	187 (86.0)	64 (18.0)	75 (23.8)	28.85 (97.42)
Standard Power Take-off Speed (540 rpm) — One Hour								
44.84 (33.44)	2199	2.741 (10.376)	0.427 (0.259)	16.36 (3.223)	186 (85.7)	64 (17.8)	75 (23.7)	28.84 (97.39)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
40.35 (30.08)	2592	2.661 (10.072)	0.460 (0.280)	15.16 (2.986)	182 (83.3)	65 (18.3)	75 (23.9)	— —
0.00 (0.00)	2756	0.864 (3.271)	— —	— —	173 (78.3)	65 (18.3)	74 (23.3)	— —
20.98 (15.65)	2694	1.676 (6.346)	0.558 (0.339)	12.52 (2.466)	175 (79.4)	65 (18.3)	74 (23.1)	— —
45.76 (34.12)	2501	3.074 (11.634)	0.469 (0.285)	14.89 (2.933)	186 (85.3)	66 (18.6)	74 (23.3)	— —
10.58 (7.89)	2721	1.255 (4.751)	0.828 (0.504)	8.43 (1.660)	174 (78.9)	69 (20.3)	74 (23.3)	— —
30.93 (23.07)	2650	2.102 (7.957)	0.474 (0.288)	14.72 (2.899)	177 (80.6)	66 (18.9)	74 (23.3)	— —
Av 24.76 **Av (18.47)**	**2652**	**1.939** **(7.339)**	**0.546** **(0.332)**	**12.77** **(2.516)**	**178** **(81.0)**	**66** **(18.8)**	**74** **(23.4)**	**28.84** **(97.39)**

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 8th (III-1) Gear											
38.39 (28.63)	2551 (11.35)	5.64 (9.08)	2501	6.83	2.959 (11.201)	0.538 (0.327)	12.98 (2.556)	186 (85.6)	60 (15.3)	71 (21.7)	28.78 (97.17)
75% of Pull at Maximum Power — Ten Hours 8th (III-1) Gear											
30.77 (22.94)	1904 (8.47)	6.06 (9.75)	2630	4.89	2.404 (9.101)	0.545 (0.332)	12.80 (2.521)	183 (83.7)	64 (17.8)	77 (24.7)	28.54 (96.38)
50% of Pull at Maximum Power — Two Hours 8th (III-1) Gear											
21.15 (15.77)	1269 (5.64)	6.25 (10.06)	2571	3.51	1.877 (7.105)	0.619 (0.377)	11.27 (2.219)	180 (81.9)	69 (20.6)	83 (28.1)	28.69 (96.82)
50% of Pull at Reduced Engine Speed — Two Hours 10th (III-2) Gear											
21.13 (15.76)	1268 (5.64)	6.25 (10.06)	1732	3.28	1.490 (5.641)	0.492 (0.299)	14.18 (2.794)	181 (82.8)	70 (21.1)	87 (30.6)	28.64 (96.71)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
35.01 (26.10)	4608 (20.50)	2.85 (4.58)	2533	14.93	5th (I-4) Gear	181 (82.5)	53 (11.7)	61 (16.1)	28.82 (97.32)
37.03 (27.62)	3976 (17.68)	3.49 (5.62)	2499	11.90	6th (II-2) Gear	182 (83.1)	54 (12.2)	6 (16.7)	28.82 (97.32)
37.57 (28.02)	3186 (14.17)	4.42 (7.12)	2502	9.00	7th (II-3) Gear	183 (83.6)	55 (12.8)	63 (17.2)	28.82 (97.32)
38.74 (28.89)	2576 (11.46)	5.64 (9.08)	2499	6.89	8th (III-1) Gear	185 (85.0)	59 (15.0)	70 (21.1)	28.78 (97.19)
37.52 (27.98)	1921 (8.55)	7.33 (11.79)	2500	5.20	9th (II-4) Gear	185 (83.6)	55 (12.8)	64 (17.8)	28.81 (97.29)
37.64 (28.07)	1581 (7.03)	8.93 (14.37)	2500	4.56	10th (III-2) Gear	183 (83.9)	56 (13.3)	66 (18.9)	28.81 (97.29)

Department of Agricultural Engineering

Dates of Test: April 15 to 29, 1985

Manufacturer: FIAT TRATTORI, S.p.A. Via Picodella Mirandola 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8382 **Fuel weight** 6.979 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 2.239 gal *(8.475 l)* **Drained from motor** 1.962 gal *(7.426 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 44.5 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** three cylinder vertical **Serial No.** 8035.06*206-023147* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.937" × 4.528" *(100 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 165 cu in *(2710 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow paper cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard **Serial No.** 55-66 1/12*377416* **Tread width** rear 56.1" *(1425 mm)* to 75.8" *(1925 mm)* front 55.5" *(1410 mm)* to 75.2" *(1910 mm)* **Wheel base** 85.6" *(2175 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 27.8" *(707 mm)* Vertical distance above roadway 32.5" *(825 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 1.1 *(1.7)* second 1.6 *(2.6)* third 2.0 *(3.2)* fourth 2.5 *(4.0)* fifth 3.2 *(5.1)* sixth 3.8 *(6.2)* seventh 4.7 *(7.6)* eighth 5.9 *(9.5)* ninth 7.5 *(12.0)* tenth 9.0 *(14.5)* eleventh 11.1 *(17.8)* twelfth 17.6 *(28.4)* reverse 2.8 *(4.4)*, 4.3 *(6.8)*, 5.2 *(8.4)*, 8.3 *(13.4)* **Clutch** dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 126" *(3.20 m)* left 126" *(3.20 m)*(on concrete surface without brake) right 145" *(3.68 m)* left 145" *(3.68 m)* **Turning space diameter** (on concrete surface with brake applied) right 261" *(6.63 m)* left 261" *(6.63 m)*(on concrete surface without brake) right 299" *(7.59 m)* left 299" *(7.59 m)* **Power take-off** 540 rpm at 2199 engine rpm **Unladen tractor mass** 5290 lb *(2400 kg)*.

LUGGING ABILITY IN 8th (III-1) GEAR

Crankshaft Speed rpm	2499	2255	1994	1741	1501	1245
Pull—lbs (kN)	2576 (11.46)	2802 (12.46)	3047 (13.55)	3251 (14.46)	3354 (14.92)	3337 (14.84)
Increase in Pull %	0	9	18	26	30	30
Power—Hp (kW)	38.74 (28.89)	37.70 (28.12)	35.99 (26.84)	33.28 (24.81)	29.50 (22.00)	24.32 (18.14)
Speed—Mph (km/h)	5.64 (9.08)	5.05 (8.12)	4.43 (7.13)	3.84 (6.18)	3.30 (5.31)	2.73 (4.40)
Slip %	6.89	7.68	8.40	9.00	9.35	9.23

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours	95.5
75% of Pull at Maximum Power—Ten Hours	94.0
50% of Pull at Maximum Power—Two Hours	95.0
50% of Pull at Reduced Engine Speed—Two Hours	90.0
Bystander in 12th (III-4) gear	85.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 16.9-28; 6; 16 *(110)*	Two 16.9-28; 6; 16 *(110)*
Ballast	—Liquid (each)	480 lb *(218 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 9.5L-15; 8; 36 *(250)*	Two 9.5L-15; 8; 36 *(250)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	72 lb *(33 kg)*	None
Height of Drawbar		19.5 in *(495 mm)*	19.5 in *(495 mm)*
Static Weight with Operator	—Rear	4695 lb *(2130 kg)*	3735 lb *(1694 kg)*
	—Front	1875 lb *(850 kg)*	1730 lb *(785 kg)*
	—Total	6570 lb *(2980 kg)*	5465 lb *(2479 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2875	*(19820)*	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	171	*(77)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	4464	*(2025)*	
TIME sec	2.37		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	9.2	*(234)*	
Top of timed range	33.2	*(843)*	
Highest position	36.3	*(922)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	8.9	*(226)*	
Top of timed range	34.5	*(876)*	
Highest position	38.1	*(968)*	

*Implement load capacity for transport purposes not specified by manufacturer

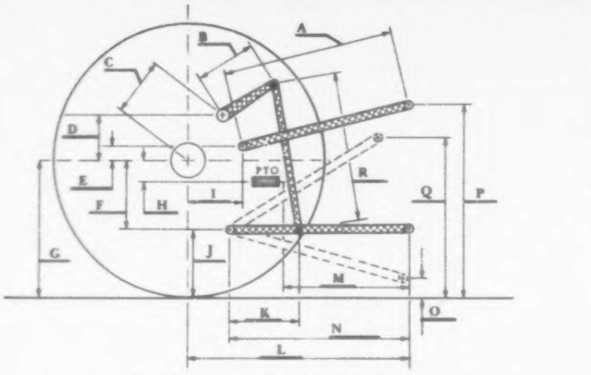
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 152°F *(66.7°C)*. Six gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 15[illegible], June 14, 1985.

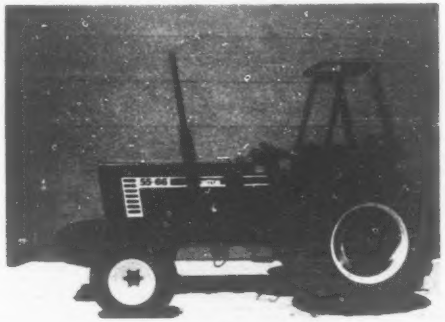
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.3	*794*
B	10.0	*255*
C	13.8	*350*
D	11.7	*297*
E	10.4	*264*
F	8.1	*206*
G	26.6	*676*
H	0.6	*16*
I	6.9	*176*
J	18.5	*470*
K	16.8	*428*
L	38.2	*971*
M	25.6	*650*
N	35.4	*900*
O	8.0	*203*
P	37.5	*953*
Q	37.0	*940*
R	23.0	*584*



Hesston 55-66 Fiat Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1531—HESSTON 60-66DT FIAT DIESEL ALSO HESSTON 60-66 FIAT DIESEL

12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—614 rpm)								
51.49 *(38.40)*	2500	3.168 *(11.990)*	0.429 *(0.261)*	16.26 *(3.203)*	193 *(89.4)*	66 *(19.1)*	75 *(23.8)*	28.95 *(97.75)*
Standard Power Take-off Speed (540 rpm) — One Hour								
48.51 *(36.18)*	2199	2.832 *(10.717)*	0.407 *(0.248)*	17.13 *(3.375)*	190 *(87.9)*	66 *(18.9)*	75 *(24.1)*	28.96 *(97.79)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
46.46 *(34.64)*	2654	2.938 *(11.120)*	0.441 *(0.268)*	15.81 *(3.115)*	183 *(83.9)*	66 *(18.9)*	75 *(23.9)*	....
0.00 *(0.00)*	2758	0.976 *(3.696)*	....	....	171 *(77.2)*	66 *(18.6)*	74 *(23.3)*	....
23.73 *(17.70)*	2708	1.897 *(7.180)*	0.558 *(0.339)*	12.51 *(2.465)*	175 *(79.4)*	66 *(18.9)*	75 *(23.9)*	....
51.80 *(38.63)*	2500	3.226 *(12.211)*	0.434 *(0.264)*	16.06 *(3.163)*	192 *(88.6)*	66 *(18.9)*	76 *(24.2)*	....
11.97 *(8.93)*	2733	1.449 *(5.487)*	0.845 *(0.514)*	8.26 *(1.627)*	171 *(77.2)*	66 *(18.9)*	75 *(23.9)*	....
35.15 *(26.21)*	2676	2.417 *(9.150)*	0.480 *(0.292)*	14.54 *(2.864)*	178 *(80.8)*	65 *(18.3)*	75 *(23.9)*	....
Av 28.18 **Av *(21.02)***	**2671**	**2.151** ***(8.140)***	**0.532** ***(0.324)***	**13.11** ***(2.582)***	**178** ***(81.2)***	**66** ***(18.8)***	**75** ***(23.8)***	**29.00** ***(97.93)***

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-1) Gear											
44.67 *(33.31)*	3031 *(13.48)*	5.53 *(8.89)*	2499	5.37	3.147 *(11.913)*	0.491 *(0.299)*	14.19 *(2.796)*	182 *(83.3)*	61 *(16.1)*	69 *(20.6)*	29.06 *(98.11)*
75% of Pull at Maximum Power — Ten Hours 8th (III-1) Gear											
36.11 *(26.92)*	2275 *(10.12)*	5.95 *(9.58)*	2649	3.83	2.715 *(10.279)*	0.525 *(0.319)*	13.30 *(2.619)*	193 *(89.4)*	72 *(22.3)*	90 *(32.3)*	28.72 *(96.99)*
50% of Pull at Maximum Power — Two Hours 8th (III-1) Gear											
24.89 *(18.56)*	1521 *(6.76)*	6.14 *(9.88)*	2696	2.59	2.186 *(8.276)*	0.613 *(0.373)*	11.38 *(2.242)*	178 *(80.8)*	61 *(16.1)*	82 *(27.5)*	29.08 *(98.18)*
50% of Pull at Reduced Engine Speed — Two Hours 10th (III-2) Gear											
24.87 *(18.55)*	1519 *(6.76)*	6.14 *(9.88)*	1747	2.36	1.720 *(6.513)*	0.483 *(0.294)*	14.46 *(2.848)*	180 *(82.2)*	61 *(15.8)*	84 *(28.6)*	29.05 *(98.08)*
MAXIMUM POWER IN SELECTED GEARS											
40.49 *(30.20)*	5515 *(24.53)*	2.75 *(4.43)*	2534	14.75	5th (I-4) Gear			186 *(85.3)*	60 *(15.6)*	75 *(23.9)*	28.91 *(97.62)*
43.33 *(32.31)*	4682 *(20.83)*	3.47 *(5.58)*	2501	9.25	6th (II-2) Gear			191 *(88.1)*	61 *(16.1)*	76 *(24.4)*	28.90 *(97.59)*
43.64 *(32.55)*	3759 *(16.72)*	4.35 *(7.01)*	2499	6.93	7th (II-3) Gear			192 *(88.6)*	61 *(16.1)*	77 *(25.0)*	28.89 *(97.56)*
45.51 *(33.94)*	3087 *(13.73)*	5.53 *(8.90)*	2502	5.37	8th (III-1) Gear			184 *(84.2)*	62 *(16.7)*	71 *(21.7)*	29.06 *(98.13)*
43.14 *(32.17)*	2263 *(10.07)*	7.15 *(11.51)*	2499	4.06	9th (II-4) Gear			192 *(88.9)*	62 *(16.7)*	79 *(26.1)*	28.88 *(97.52)*
43.04 *(32.10)*	1856 *(8.26)*	8.70 *(14.00)*	2499	3.30	10th (III-2) Gear			192 *(88.9)*	62 *(16.7)*	78 *(25.6)*	28.88 *(97.52)*

Department of Agricultural Engineering

Dates of Test: August 28-September 5, 1984

Manufacturer: FIAT TRATTORI, S.p.A. Via Picodella Mirandola, 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8377 **Fuel weight** 6.975 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 1.842 gal *(6.972 l)* **Drained from motor** 1.534 gal *(5.807 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 44.0 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** three cylinder vertical **Serial No.** 8035.05*200-003704* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.094" × 4.527" *(104 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 178.8 cu in *(2931 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** oil bath **Oil filter** one full flow cartridge **Fuel filter** two paper elements **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 60-66DT/1*385014* **Tread width** rear 56.1" *(1425 mm)* to 75.8" *(1925 mm)* front 56.9" *(1445 mm)* to 73.8" *(1875 mm)* **Wheel base** 83.4" *(2119 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 31.5" *(799 mm)* Vertical distance above roadway 32.5" *(825 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 1.1 *(1.7)* second 1.7 *(2.7)* third 2.1 *(3.3)* fourth 2.5 *(4.1)* fifth 3.2 *(5.1)* sixth 3.9 *(6.3)* seventh 4.8 *(7.7)* eighth 5.9 *(9.5)* ninth 7.4 *(11.8)* tenth 9.1 *(14.6)* eleventh 11.1 *(17.9)* twelfth 17.2 *(27.6)* reverse 1.1 *(1.7)*, 1.7 *(2.7)*, 2.1 *(3.3)*, 2.5 *(4.1)*, 3.2 *(5.1)*, 3.9 *(6.3)*, 4.8 *(7.7)*, 5.9 *(9.5)*, 7.4 *(11.8)*, 9.1 *(14.6)*, 11.1 *(17.9)*, 17.2 *(27.6)* **Clutch** dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 158" *(4.01 m)* left 158" *(4.01 m)* (on concrete surface without brake) right 188" *(4.78 m)* left 188" *(4.78 m)* **Turning space diameter** (on concrete surface with brake applied) right 325.5" *(8.27 m)* left 325.5" *(8.27 m)* (on concrete surface without brake) right 385.5" *(9.79 m)* left 385.5" *(9.79 m)* **Power take-off** 540 rpm at 2199 engine rpm **Unladen tractor mass** 5700 lbs *(2586 kg)*.

LUGGING ABILITY IN 8th (III-1) GEAR

Crankshaft Speed rpm	2502	2259	1992	1753	1499	1245
Pull—lbs *(kN)*	3087 *(13.73)*	3201 *(14.24)*	3358 *(14.94)*	3473 *(15.45)*	3584 *(15.94)*	3485 *(15.50)*
Increase in Pull %	0	4	9	13	16	13
Power—Hp *(kW)*	45.51 *(33.94)*	42.49 *(31.69)*	39.17 *(29.21)*	35.58 *(26.53)*	31.32 *(23.36)*	25.35 *(18.90)*
Speed—Mph *(kmh)*	5.53 *(8.90)*	4.98 *(8.01)*	4.37 *(7.04)*	3.84 *(6.18)*	3.28 *(5.27)*	2.73 *(4.39)*
Slip %	5.37	5.61	5.85	6.22	6.46	6.22

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
Maximum Available Power—Two Hours	94.0	94.5
75% of Pull at Maximum Power—Ten Hours		95.0
50% of Pull at Maximum Power—Two Hours		94.5
50% of Pull at Reduced Engine Speed—Two Hours		89.0
Bystander in 12th (III-4) gear		85.5

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cooling med	Temp. °F (°C) Air wet bulb	Temp. °F (°C) Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-1) Gear											
44.89 *(33.48)*	2997 *(13.33)*	5.62 *(9.04)*	2499	4.59	3.161 *(11.967)*	0.491 *(0.299)*	14.20 *(2.798)*	188 *(86.7)*	65 *(18.1)*	75 *(23.6)*	29.06 *(98.13)*
MAXIMUM POWER IN SELECTED GEARS											
38.27 *(28.54)*	6424 *(28.57)*	2.23 *(3.60)*	2625	14.97	4th (II-1) Gear			181 *(82.5)*	56 *(13.3)*	71 *(21.7)*	28.93 *(97.69)*
45.57 *(33.98)*	3038 *(13.51)*	5.63 *(9.05)*	2502	4.56	8th (III-1) Gear			187 *(86.1)*	64 *(17.8)*	74 *(23.3)*	29.06 *(98.13)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 16.9-28; 6; 16 *(110)*	Two 16.9-28; 6; 16 *(110)*
Ballast	—Liquid (each)	342 lb *(155 kg)*	None
	—Cast Iron (each)	410 lb *(186 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 9.5-24; 6; 20 *(140)*	Two 9.5-24; 6; 20 *(140)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	38 lb *(17 kg)*	None
Height of Drawbar		18 in *(455 mm)*	18 in *(455 mm)*
Static Weight with Operator	—Rear	5235 lb *(2375 kg)*	3730 lb *(1692 kg)*
	—Front	2225 lb *(1009 kg)*	2150 lb *(975 kg)*
	—Total	7460 lb *(3384 kg)*	5880 lb *(2667 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)* Location	2725 remote	*18790*	
Hydraulic oil temperature °F (°C) Location	181 pump inlet	*83*	
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH CATEGORY	no II		 *not measured
LOAD lbs *(kg)* TIME sec	3920 2.02	*1778*	
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.1	*308*	
Top of timed range	36.3	*921*	
Highest position	36.8	*933*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.6	*294*	
Top of timed range	38.1	*968*	
Highest position	38.7	*983*	

*Implement load capacity for transport purposes not specified by manufacturer.

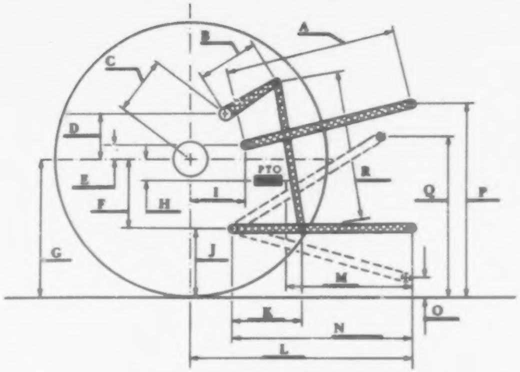
REPAIRS and ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 167°F *(74.8°C)*. Six gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of offical Tractor Test No. **1531**, December 21, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	30.3	*768*
B	10.0	*255*
C	13.8	*350*
D	11.7	*297*
E	10.4	*264*
F	8.1	*206*
G	25.5	*647*
H	0.6	*15*
I	6.9	*176*
J	17.4	*441*
K	16.8	*428*
L	38.2	*971*
M	25.6	*650*
N	35.4	*900*
O	8.0	*203*
P	36.4	*924*
Q	36.0	*914*
R	22.1	*562*

Hesston 60-66DT Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1561—HESSTON 70-66DT FIAT DIESEL
ALSO HESSTON 70-66 FIAT DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1050 rpm)								
62.72 (46.77)	2500	3.708 (14.037)	0.415 (0.252)	16.91 (3.332)	193 (89.5)	60 (15.6)	75 (23.9)	28.81 (97.27)
Standard Power Take-off Speed (1000 rpm) — One Hour								
62.71 (46.76)	2381	3.645 (13.799)	0.408 (0.247)	17.20 (3.389)	196 (90.8)	60 (15.7)	75 (23.7)	28.77 (97.25)
Standard Power Take-off Speed (540 rpm) — One Hour								
60.90 (45.42)	2199	3.466 (13.121)	0.397 (0.242)	17.57 (3.462)	197 (91.5)	59 (14.9)	75 (23.7)	28.92 (97.87)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
56.35 (42.02)	2645	3.452 (13.066)	0.428 (0.260)	16.32 (3.216)	190 (87.5)	61 (16.1)	76 (24.4)	
0.00 (0.00)	2752	1.145 (4.336)			175 (79.4)	60 (15.3)	74 (23.3)	
28.28 (21.09)	2651	2.162 (8.185)	0.534 (0.325)	13.08 (2.576)	180 (82.4)	60 (15.6)	75 (23.6)	
62.25 (46.42)	2500	3.705 (14.026)	0.416 (0.253)	[illegible]	[illegible]	60 (15.6)	76 (24.2)	
14.35 (10.70)	2592	1.659 (6.281)	0.807 (0.491)	[illegible]	[illegible]	60 (15.3)	74 (23.3)	
41.92 (31.26)	2622	2.734 (10.349)	0.455 (0.277)	15.34 (3.021)	189 (87.2)	60 (15.3)	76 (24.2)	
Av 33.85 (25.25)	**2643**	**2.476 (9.373)**	**0.510 (0.310)**	**13.67 (2.694)**	**185 (84.8)**	**60 (15.5)**	**75 (23.8)**	**28.78 (97.39)**

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 8th (III-1) Gear											
54.22 (40.43)	3573 (15.89)	5.69 (9.16)	2500	4.30	3.704 (14.022)	0.477 (0.290)	14.64 (2.883)	195 (90.6)	62 (16.4)	67 (19.2)	29.00 (97.92)
75% of Pull at Maximum Power — Ten Hours 8th (III-1) Gear											
43.91 (32.74)	2708 (12.05)	6.08 (9.79)	2651	3.57	3.225 (12.209)	0.513 (0.312)	13.61 (2.682)	186 (85.6)	53 (11.4)	54 (12.2)	28.77 (97.16)
50% of Pull at Maximum Power — Two Hours 8th (III-1) Gear											
30.01 (22.38)	1800 (8.01)	6.25 (10.06)	2697	2.55	2.601 (9.845)	0.605 (0.368)	11.54 (2.273)	181 (82.8)	46 (7.8)	47 (8.3)	28.84 (97.39)
50% of Pull at Reduced Engine Speed — Two Hours 10th (III-2) Gear											
30.01 (22.38)	1799 (8.00)	6.26 (10.07)	1751	2.48	2.063 (7.811)	0.480 (0.292)	14.54 (2.865)	180 (82.2)	46 (7.5)	48 (8.6)	28.70 (96.91)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
49.43 (36.86)	8320 (37.01)	2.23 (3.59)	2590	14.74	4th (II-1) Gear	185 (85.9)	45 (7.2)	48 (8.9)	28.73 (97.08)
52.65 (39.26)	6689 (29.75)	2.95 (4.75)	2499	9.08	5th (I-4) Gear	188 (86.7)	45 (7.2)	47 (8.3)	28.76 (97.12)
53.91 (40.20)	5599 (24.91)	3.61 (5.81)	2499	7.11	6th (II-2) Gear	191 (88.3)	45 (7.2)	47 (8.3)	28.76 (97.12)
53.74 (40.07)	4471 (19.89)	4.51 (7.25)	2501	5.46	7th (II-3) Gear	191 (88.3)	45 (7.2)	47 (8.3)	28.76 (97.12)
54.85 (40.89)	3611 (16.06)	5.69 (9.16)	2501	4.30	8th (III-1) Gear	188 (86.7)	45 (7.2)	48 (8.9)	28.75 (97.08)
52.45 (39.11)	2682 (11.93)	7.33 (11.80)	2499	3.19	9th (II-4) Gear	191 (88.1)	45 (7.2)	47 (8.3)	28.76 (97.12)
52.33 (39.02)	2200 (9.79)	8.92 (14.36)	2502	2.62	10th (III-2) Gear	190 (87.5)	45 (7.2)	48 (8.9)	28.73 (97.08)

Department of Agricultural Engineering

Dates of Test: April 17 to May 1, 1985

Manufacturer: FIAT TRATTORI, S.p.A. Via Pecol lla Mirandola 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 49.5 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8382 **Fuel weight** 6.979 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 3.066 gal *(11.605 l)* **Drained from motor** 2.695 gal *(10.202 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 51.5 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** four cylinder vertical **Serial No.** 8045.06*206-019337* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.937" × 4.527" *(100 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 220.5 cu in *(3613 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow paper cartridge **Fuel filter** two paper elements **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 70-66 DT/12*439665* **Tread width** rear 59.1" *(1500 mm)* to 78.7" *(2000 mm)* front 60.2" *(1530 mm)* to 77.2" *(1960 mm)* **Wheel base** 88.5" *(2248 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 34.0" *(863 mm)* Vertical distance above roadway 36.5" *(927 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.1 *(1.7)* second 1.6 *(2.6)* third 2.0 *(3.2)* fourth 2.4 *(3.9)* fifth 3.1 *(5.1)* sixth 3.8 *(6.1)* seventh 4.6 *(7.4)* eighth 5.7 *(9.3)* ninth 7.3 *(11.8)* tenth 8.9 *(14.3)* eleventh 10.8 *(17.5)* twelfth 17.3 *(27.8)* reverse 2.8 *(4.5)*, 4.3 *(6.9)*, 5.3 *(8.5)*, 8.4 *(13.5)* **Clutch** dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 159" *(4.04 m)* left 159" *(4.04 m)* (on concrete surface without brake) right 190" *(4.83 m)* left 190" *(4.83 m)* **Turning space diameter** (on concrete surface with brake applied) right 330" *(8.38 m)* left 330" *(8.38 m)* (on concrete surface without brake) right 392" *(9.96 m)* left 392" *(9.96 m)* **Power take-off** 540 rpm at 2199 engine rpm and 1000 rpm at 2381 engine rpm **Unladen tractor mass** 6510 lb *(2953 kg)*

LUGGING ABILITY IN 8th (III-1) GEAR

Crankshaft Speed rpm	2501	2255	1997	1750	1501	1345	1009
Pull—lbs (kN)	3611 (16.06)	4003 (17.81)	4092 (18.20)	4227 (18.80)	4421 (19.67)	4486 (19.95)	3987 (17.73)
Increase in Pull %	0	11	13	17	22	24	10
Power—Hp (kW)	54.85 (40.89)	54.33 (40.47)	49.31 (36.77)	44.52 (33.20)	39.63 (29.56)	33.45 (24.95)	24.05 (17.93)
Speed—Mph (km/h)	5.69 (9.16)	5.11 (8.22)	4.52 (7.27)	3.95 (6.36)	3.36 (5.40)	2.79 (4.50)	2.27 (3.66)
Slip %	4.30	4.39	4.85	5.26	5.59	5.39	4.85

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Available Power—Two Hours	94.0	94.5
75% of Pull at Maximum Power—Ten Hours		94.0
50% of Pull at Maximum Power—Two Hours		94.0
50% of Pull at Reduced Engine Speed—Two Hours		90.0
Bystander in 12th (III-4) gear	86.0	—

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp-hr (kg/kW-h)	Hp-hr/gal (kW-h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 8th (III-1) Gear											
53.54 (39.92)	3644 (16.21)	5.51 (8.87)	2499	6.47	3.697 (13.994)	0.492 (0.299)	14.48 (2.853)	195 (90.5)	65 (18.3)	72 (22.2)	28.96 (97.78)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
47.73 (35.61)	6217 (27.65)	2.88 (4.64)	2650	14.94	5th (I-4) Gear	182 (83.3)	45 (7.2)	48 (8.9)	28.73 (97.08)
54.40 (40.57)	3695 (16.44)	5.52 (8.89)	2500	6.24	8th (III-1) Gear	191 (88.1)	45 (7.2)	48 (8.9)	28.73 (97.08)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 18.4-30; 6; 16 (110)	Two 18.4-30; 6; 16 (110)
Ballast	—Liquid (each)	550 lb (249 kg)	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi (kPa)	Two 12.4-24; 6; 18 (125)	Two 12.4-24; 6; 18 (125)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	458 lb (208 kg)	None
Height of Drawbar		16.5 in (420 mm)	16.5 in (420 mm)
Static Weight with Operator	—Rear	5290 lb (2400 kg)	4190 lb (1901 kg)
	—Front	3415 lb (1549 kg)	2500 lb (1134 kg)
	—Total	8705 lb (3949 kg)	6690 lb (3035 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2850	(19650)	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	174	(79)	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs (kg)	5670	(2572)	
TIME sec	5.86		
HITCH POINT MOVEMENT in (mm)			
Lowest position	13.3	(338)	
Top of timed range	36.3	(922)	
Highest position	** 36.4	(925)	
LOAD CG MOVEMENT in (mm)			
Lowest position	13.2	(335)	
Top of timed range	37.6	(955)	
Highest position	37.7	(958)	

*Implement load capacity for transport purposes are specified by manufacturer.

**The observed power range, 23.1 in (587 mm) is less than the minimum power range for Cat II, 24 in (610 mm) specified by ASAE Standard S217.10.

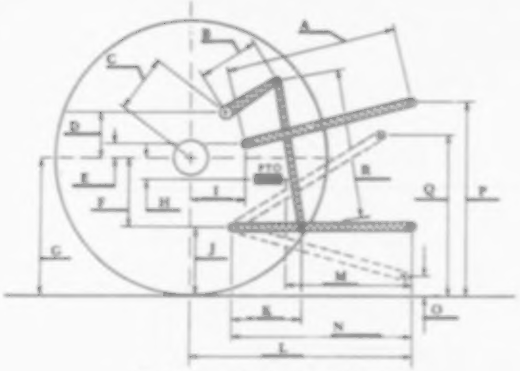
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 162°F *(72.3°C)*. Seven gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1561**, June 14, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	32.3	*819*
B	10.0	*255*
C	13.8	*350*
D	11.7	*297*
E	10.4	*264*
F	8.1	*206*
G	28.0	*711*
H	0.6	*16*
I	6.3	*160*
J	19.9	*505*
K	21.3	*541*
L	38.9	*989*
M	27.9	*708*
N	36.7	*932*
O	8.0	*203*
P	38.9	*987*
Q	34.3	*870*
R	26.0	*660*

Hesston 70-66DT Fiat Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1562—HESSTON 70-90 FIAT DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —1050 rpm)								
62.25 (46.42)	2500	3.867 (14.638)	0.434 (0.264)	16.10 (3.171)	188 (86.7)	67 (19.4)	75 (23.9)	28.85 (97.42)
Standard Power Take-off Speed (1000 rpm) — One Hour								
61.94 (46.19)	2581	3.749 (14.191)	0.422 (0.257)	16.52 (3.254)	188 (86.7)	67 (19.4)	75 (23.9)	28.84 (97.39)
Standard Power Take-off Speed (540 rpm) — One Hour								
59.88 (44.65)	2199	3.580 (13.551)	0.417 (0.254)	16.73 (3.296)	189 (87.2)	68 (19.7)	75 (23.5)	28.85 (97.39)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
56.28 (41.96)	2650	3.545 (13.421)	0.440 (0.268)	15.87 (3.126)	184 (84.4)	67 (19.4)	75 (23.9)	...
0.00 (0.00)	2750	1.186 (4.490)	...	...	177 (80.6)	67 (19.4)	74 (23.3)	...
28.50 (21.25)	2693	2.252 (8.524)	0.552 (0.336)	12.66 (2.493)	179 (81.7)	67 (19.4)	75 (23.9)	...
62.32 (46.47)	2500	3.805 (14.397)	0.426 (0.259)	16.38 (3.226)	189 (87.2)	68 (19.7)	75 (23.9)	...
14.42 (10.75)	2726	1.725 (6.529)	0.834 (0.507)	8.37 (1.649)	177 (80.6)	68 (19.7)	75 (23.9)	...
42.51 (31.70)	2678	2.854 (10.803)	0.469 (0.285)	14.97 (2.950)	181 (82.8)	67 (19.4)	75 (23.9)	...
Av 34.00 Av (25.36)	**2667**	**2.561 (9.695)**	**0.526 (0.320)**	**13.28 (2.616)**	**181 (82.8)**	**67 (19.5)**	**75 (23.7)**	**28.85 (97.34)**

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 8th (III-1) Gear											
53.92 (40.21)	3601 (16.02)	5.62 (9.04)	2500	7.06	3.870 (14.652)	0.497 (0.302)	13.94 (2.747)	188 (86.7)	63 (17.2)	76 (24.4)	28.95 (97.76)
75% of Pull at Maximum Power — Ten Hours 8th (III-1) Gear											
44.54 (33.21)	2735 (12.17)	6.11 (9.83)	2609	5.16	3.309 (12.526)	0.519 (0.315)	13.46 (2.652)	185 (85.0)	64 (17.8)	76 (24.4)	29.00 (97.93)
50% of Pull at Maximum Power — Two Hours 8th (III-1) Gear											
30.38 (22.66)	1824 (8.11)	6.25 (10.05)	2601	2.79	2.571 (9.733)	0.591 (0.359)	11.82 (2.328)	185 (85.0)	65 (18.3)	80 (26.7)	28.98 (97.86)
50% of Pull at Reduced Engine Speed — Two Hours 10th (III-2) Gear											
30.40 (22.67)	1825 (8.11)	6.25 (10.06)	1746	2.09	2.048 (7.754)	0.470 (0.286)	14.84 (2.923)	192 (88.9)	65 (18.3)	83 (28.3)	28.95 (97.74)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
47.98 (35.78)	6238 (27.75)	2.88 (4.64)	2605	14.90	5th (I-4) Gear	181 (82.8)	55 (12.8)	61 (16.1)	29.00 (97.76)
52.05 (38.81)	5629 (25.04)	3.47 (5.58)	2501	11.24	6th (II-2) Gear	182 (83.3)	57 (13.9)	63 (17.2)	28.93 (97.70)
53.16 (39.64)	4531 (20.15)	4.40 (7.08)	2499	7.96	7th (II-3) Gear	183 (83.9)	59 (15.0)	65 (18.3)	28.93 (97.70)
54.64 (40.74)	3647 (16.22)	5.62 (9.04)	2502	5.96	8th (III-1) Gear	189 (86.9)	63 (17.2)	77 (25.0)	28.95 (97.76)
52.58 (39.21)	2708 (12.04)	7.28 (11.72)	2501	4.42	9th (II-4) Gear	183 (83.6)	60 (17.6)	66 (18.9)	28.96 (97.79)
52.22 (38.94)	2209 (9.83)	8.86 (14.26)	2500	3.60	10th (III-2) Gear	183 (83.9)	60 (15.6)	67 (19.4)	28.96 (97.75)

Department of Agricultural Engineering

Dates of Test: April 22 to May 9, 1985

Manufacturer: FIAT TRATTORI, S.p.A., Via Picodella Mirandola 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.5 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8384 **Fuel weight** 6.981 lbs/gal *(0.837 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 3.045 gal *(11.528 l)* **Drained from motor** 2.774 gal *(10.500 l)* **Transmission and final drive lubricant** API 505 hydraulic fluid **Total time engine was operated** 37.0 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** four cylinder vertical **Serial No.** 8045.06*200-022974* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.937" × 4.527" *(100 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 220.3 cu in *(3613 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** two paper elements **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard **Serial No.** *70-90/12*530842* **Tread width** rear 63" *(1600 mm)* to 82.7" *(2100 mm)* front 55.1" *(1400 mm)* to 74.8" *(1900 mm)* **Wheel base** 92.2" *(2342 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30.9" *(786 mm)* Vertical distance above roadway 38.2" *(970 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.1 *(1.7)* second 1.7 *(2.7)* third 2.0 *(3.2)* fourth 2.5 *(4.0)* fifth 3.2 *(5.2)* sixth 3.9 *(6.3)* seventh 4.8 *(7.7)* eighth 6.0 *(9.6)* ninth 7.6 *(12.2)* tenth 9.2 *(14.8)* eleventh 11.3 *(18.2)* twelfth 18.0 *(28.9)* reverse 2.8 *(4.5)*, 4.3 *(6.9)*, 5.2 *(8.4)*, 8.4 *(13.5)* **Clutch** dry disc operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 134" *(3.40 m)* left 134" *(3.40 m)* (on concrete surface without brake) right 154" *(3.91 m)* left 154" *(3.91 m)* **Turning space diameter** (on concrete surface with brake applied) right 276" *(7.01 m)* left 276" *(7.01 m)* (on concrete surface without brake) right 316" *(8.03 m)* left 316" *(8.03 m)* **Power take-off** 540 rpm at 2199 engine rpm and 1000 rpm at 2581 engine rpm **Unladen tractor mass** 7110 lb *(3225 kg)*.

LUGGING ABILITY IN 8th (III-1) GEAR

Crankshaft Speed rpm	2502	2251	2000	1749	1494	1242	1006
Pull—lbs *(kN)*	3647 *(16.22)*	3952 *(17.58)*	4063 *(18.07)*	4182 *(18.60)*	4396 *(19.55)*	4512 *(20.07)*	4050 *(18.02)*
Increase in Pull %	0	8	11	15	21	24	11
Power—Hp *(kW)*	54.64 *(40.74)*	52.95 *(39.47)*	48.18 *(35.93)*	43.05 *(32.10)*	38.56 *(28.75)*	32.81 *(24.46)*	24.14 *(18.00)*
Speed—Mph *(km/h)*	5.62 *(9.04)*	5.02 *(8.08)*	4.45 *(7.16)*	3.86 *(6.21)*	3.29 *(5.29)*	2.73 *(4.39)*	2.24 *(3.60)*
Slip %	5.96	6.61	7.00	7.26	7.77	8.02	7.15

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	80.0
75% of Pull at Maximum Power—Ten Hours	80.5
50% of Pull at Maximum Power—Two Hours	81.0
50% of Pull at Reduced Engine Speed—Two Hours	75.0
Bystander in 12th (III-4) gear	85.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-30; 8; 16 *(110)*	Two 18.4-30; 8; 16 *(110)*
Ballast	—Liquid (each)	210 lb *(95 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 7.50-18; 8; 40 *(275)*	Two 7.50-18; 8; 40 *(275)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	55 lb *(25 kg)*	None
Height of Drawbar		21 in *(535 mm)*	21 in *(535 mm)*
Static Weight with Operator	—Rear	5340 lb *(2422 kg)*	4920 lb *(2232 kg)*
	—Front	2435 lb *(1105 kg)*	2365 lb *(1073 kg)*
	—Total	7775 lb *(3527 kg)*	7285 lb *(3305 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2750	*(18960)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	185	*(85)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	5212	*(2364)*	
TIME sec	2.71		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	11.3	*(287)*	
Top of timed range	35.3	*(897)*	
Highest position	36.1	*(917)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.0	*(279)*	
Top of timed range	37.3	*(947)*	
Highest position	38.4	*(975)*	

*Implement load capacity for transport purposes not specified by manufacturer

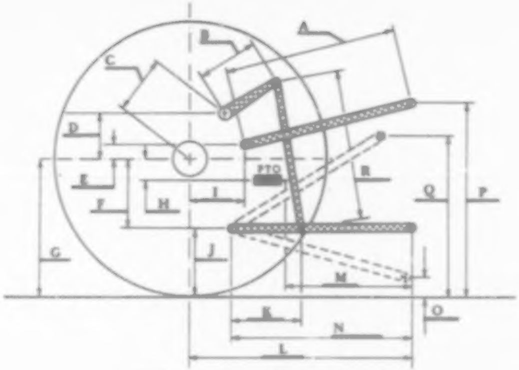
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 154°F *(67.8°C)*. Six gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1562**, June 14, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	27.1	*689*
B	10.0	*255*
C	13.8	*350*
D	11.8	*300*
E	9.8	*250*
F	7.9	*200*
G	27.5	*699*
H	0.6	*16*
I	15.0	*380*
J	19.8	*502*
K	17.7	*450*
L	43.3	*1100*
M	23.2	*590*
N	37.8	*960*
O	8.0	*203*
P	38.8	*984*
Q	36.0	*914*
R	23.5	*597*

Hesston 70-90 Fiat Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1532—HESSTON 80-66DT FIAT DIESEL ALSO HESSTON 80-66 FIAT DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed - Two hours (PTO Speed—1050 rpm)								
70.45 (52.53)	2500	4.142 (15.678)	0.410 (0.249)	17.01 (3.350)	188 (86.8)	60 (15.7)	75 (24.1)	28.99 (97.90)
Standard Power Take-off Speed (1000 rpm) — One Hour								
68.91 (51.39)	2381	4.001 (15.144)	0.405 (0.246)	17.22 (3.393)	190 (87.8)	60 (15.5)	78 (25.3)	28.98 (97.86)
Standard Power Take-off Speed (540 rpm) — One Hour								
63.20 (47.13)	2198	3.704 (14.021)	0.396 (0.241)	17.60 (3.467)	192 (88.6)	64 (17.7)	81 (26.9)	28.93 (97.69)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
62.62 (46.70)	2616	3.756 (14.217)	0.418 (0.254)	16.67 (3.285)	184 (84.4)	62 (16.6)	78 (25.3)	
0.00 (0.00)	2720	1.157 (4.381)			165 (73.9)	63 (17.2)	79 (25.8)	
32.38 (24.14)	2705	2.409 (9.120)	0.519 (0.316)	13.44 (2.647)	176 (80.0)	62 (16.7)	80 (26.4)	
71.57 (53.37)	2501	4.229 (16.009)	0.415 (0.252)	16.92 (3.334)	191 (88.3)	62 (16.7)	80 (26.7)	
16.39 (12.22)	2737	1.805 (6.834)	0.767 (0.466)	9.08 (1.790)	168 (75.3)	62 (16.6)	80 (26.4)	
47.92 (35.73)	2568	3.033 (11.481)	0.441 (0.268)	15.80 (3.112)	180 (81.9)	62 (16.6)	79 (26.1)	
Av 38.45 **Av (28.67)**	**2658**	**2.731** **(10.339)**	**0.495** **(0.301)**	**14.08** **(2.773)**	**177** **(80.4)**	**62** **(16.6)**	**79** **(26.1)**	**28.95** **(97.74)**

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 8th (III-1) Gear											
62.20 (46.38)	4260 (18.95)	5.48 (8.81)	2500	6.73	4.159 (15.745)	0.466 (0.284)	14.96 (2.946)	184 (84.2)	60 (15.6)	67 (19.2)	29.00 (97.93)
75% of Pull at Maximum Power — Ten Hours 8th (III-1) Gear											
50.59 (37.72)	3187 (14.18)	5.95 (9.58)	2670	5.41	3.547 (13.425)	0.491 (0.299)	14.21 (2.799)	179 (81.4)	59 (14.8)	61 (16.0)	28.88 (97.78)
50% of Pull at Maximum Power — Two Hours 8th (III-1) Gear											
34.76 (25.92)	2140 (9.52)	6.09 (9.80)	2685	5.45	2.746 (10.396)	0.551 (0.335)	12.66 (2.494)	172 (77.8)	63 (16.9)	66 (18.6)	28.82 (97.32)
50% of Pull at Reduced Engine Speed — Two Hours 10th (III-2) Gear											
34.77 (25.93)	2139 (9.51)	6.10 (9.81)	1741	5.14	2.250 (8.462)	0.447 (0.272)	15.59 (3.071)	179 (81.4)	63 (17.2)	69 (20.3)	28.82 (97.32)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
55.52 (41.40)	7245 (32.23)	2.87 (4.63)	2659	14.95	5th (I-4) Gear	181 (82.5)	60 (15.6)	69 (20.6)	29.00 (97.93)
59.52 (44.38)	6595 (29.34)	3.37 (5.41)	2499	12.21	6th (II-2) Gear	185 (84.7)	65 (18.3)	71 (21.7)	28.84 (97.39)
60.20 (44.89)	5258 (23.39)	4.31 (6.94)	2500	8.45	7th (II-3) Gear	185 (84.7)	65 (18.3)	71 (21.7)	28.84 (97.39)
62.75 (46.77)	4297 (19.11)	5.47 (8.81)	2499	6.86	8th (III-1) Gear	185 (85.0)	60 (15.6)	68 (20.0)	29.00 (97.93)
60.81 (45.35)	3195 (14.21)	7.14 (11.49)	2505	4.66	9th (II-4) Gear	184 (84.2)	64 (17.8)	70 (21.1)	28.83 (97.35)
61.50 (45.86)	2656 (11.79)	8.70 (14.01)	2501	3.80	10th (III-2) Gear	184 (84.4)	64 (17.8)	70 (21.1)	28.83 (97.35)

Department of Agricultural Engineering

Dates of Test: October 1 to 31, 1984

Manufacturer: FIAT TRATTORI, S.p.A. Via Picodella Mirandola, 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8373 **Fuel weight** 6.973 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 2.795 gal *(10.571 l)* **Drained from motor** 2.364 gal *(8.947 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 45.5 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** four cylinder vertical **Serial No.** 8045.05*265-003169* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.094" × 4.527" *(104 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 238.3 cu in *(3905 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** two paper elements **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 80-66DT/T*656641* **Tread width** rear 59.1" *(1500 mm)* to 78.7" *(2000 mm)* front 60.2" *(1530 mm)* to 77" *(1956 mm)* **Wheel base** 88.5" *(2248 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 34.0" *(863 mm)* Vertical distance above roadway 36.5" *(927 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.1 *(1.8)* second 1.7 *(2.7)* third 2.0 *(3.2)* fourth 2.5 *(4.0)* fifth 3.3 *(5.3)* sixth 3.9 *(6.3)* seventh 4.8 *(7.7)* eighth 5.9 *(9.5)* ninth 7.6 *(12.2)* tenth 9.1 *(14.6)* eleventh 11.1 *(17.9)* twelfth 17.7 *(28.5)* reverse 1.1 *(1.8)*, 1.7 *(2.7)*, 2.0 *(3.2)*, 2.5 *(4.0)*, 3.3 *(5.3)*, 3.9 *(6.3)*, 4.8 *(7.7)*, 5.9 *(9.5)*, 7.6 *(12.2)*, 9.1 *(14.6)*, 11.1 *(17.9)*, 17.7 *(28.5)* **Clutch** dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 159" *(4.04 m)* left 159" *(4.04 m)* (on concrete surface without brake) right 190" *(4.83 m)* left 190" *(4.83 m)* **Turning space diameter** (on concrete surface with brake applied) right 330" *(8.38 m)* left 330" *(8.38 m)* (on concrete surface without brake) right 392" *(9.96 m)* left 392" *(9.96 m)* **Power take-off** 540 rpm at 2198 engine rpm and 1000 rpm at 2381 engine rpm. **Unladen tractor mass** 6535 lbs *(2964 kg)*

LUGGING ABILITY IN 8th (III-1) GEAR

Crankshaft Speed rpm	2499	2252	2001	1746	1484	1255	995
Pull—lbs *(kN)*	4297 *(19.11)*	4476 *(19.91)*	4600 *(20.46)*	4843 *(21.54)*	4776 *(21.24)*	4868 *(21.65)*	4029 *(17.92)*
Increase in Pull %	0	4	7	13	11	13	−6
Power—Hp *(kW)*	62.75 *(46.77)*	58.72 *(43.79)*	53.48 *(39.88)*	48.90 *(36.46)*	41.01 *(30.58)*	34.72 *(25.89)*	23.47 *(17.50)*
Speed—Mph *(km/h)*	5.47 *(8.81)*	4.92 *(7.92)*	4.36 *(7.02)*	3.79 *(6.09)*	3.22 *(5.18)*	2.67 *(4.30)*	2.18 *(3.52)*
Slip %	6.86	6.99	7.25	7.65	7.65	7.76	6.47

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
Maximum Available Power—Two Hours	95.5	95.5
75% of Pull at Maximum Power—Ten Hours		94.0
50% of Pull at Maximum Power—Two Hours		95.5
50% of Pull at Reduced Engine Speed—Two Hours		90.0
Bystander in 12th (III-4) gear		89.0

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 8th (III-1) Gear											
62.21 *(46.39)*	4175 *(18.56)*	5.59 *(9.00)*	2501	5.91	4.180 *(15.825)*	0.469 *(0.285)*	14.88 *(2.931)*	183 *(83.9)*	59 *(15.0)*	62 *(16.7)*	29.00 *(97.93)*

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
47.85 *(35.67)*	7986 *(35.52)*	2.25 *(3.62)*	2619	14.86	4th (II-1) Gear	178 *(80.8)*	59 *(15.0)*	66 *(18.9)*	29.00 *(97.93)*
62.85 *(46.85)*	4217 *(18.76)*	5.59 *(8.99)*	2499	5.81	8th (III-1) Gear	183 *(83.9)*	59 *(15.0)*	62 *(16.7)*	29.00 *(97.93)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-30; 6; 16 *(110)*	Two 18.4-30; 6; 16 *(110)*
Ballast	—Liquid (each)	690 lb *(313 kg)*	None
	—Cast Iron (each)	610 lb *(277 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 12.4-24; 6; 24 *(165)*	Two 12.4-24; 6; 24 *(165)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	42 lb *(19 kg)*	None
Height of Drawbar		20 in *(510 mm)*	20 in *(510 mm)*
Static Weight with Operator	—Rear	6805 lb *(3087 kg)*	4205 lb *(1907 kg)*
	—Front	2595 lb *(1177 kg)*	2510 lb *(1139 kg)*
	—Total	9400 lb *(4264 kg)*	6715 lb *(3046 kg)*

Hesston 80-66DT Diesel

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 165°F *(73.0°C)*. Six gears were chosen between 15% slip and 10 mph *(16.1 km/h)* During final inspection, several vertical marks were found on the wall of the front cylinder.

We, the undersigned, certify that this is a true and correct report of offical Tractor Test No. **1532**, December 21, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

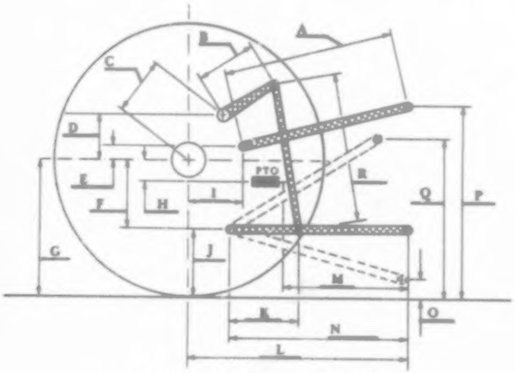
THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2525 ***	*17410*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	184	*84*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	5194	*2356*	
TIME sec	7.04		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	14.6	*371*	
Top of timed range	**36.6	*930*	
Highest position	36.6	*930*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.4	*341*	
Top of timed range	36.9	*937*	
Highest position	36.8	*933*	

*Implement load capacity for transport purposes not specified by manufacturer

**The observed power range 22" *(560 mm)* does not meet the minimum power range 24 in. *(610 mm)* specified by ASAE Standard S217.10

***The observed maximum pressure was outside the range specified by the manufacturer 2600-2800 psi *(17930-19307 kPa)*



	inch	*mm*
A	32.4	*822*
B	10.0	*255*
C	13.8	*350*
D	11.7	*297*
E	10.4	*264*
F	8.1	*206*
G	27.9	*708*
H	0.6	*15*
I	6.3	*160*
J	19.8	*502*
K	21.3	*541*
L	38.9	*989*
M	27.0	*686*
N	36.7	*932*
O	8.0	*203*
P	38.8	*984*
Q	32.4	*822*
R	25.8	*654*

Hitch Dimensions as Tested -- No Load

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1563—HESSTON 80-90 FIAT DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F *(°C)* Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1060 rpm)								
70.86 *(52.84)*	2500	4.115 *(15.576)*	0.405 *(0.247)*	17.22 *(3.393)*	189 *(87.2)*	62 *(16.5)*	75 *(23.9)*	28.75 *(97.10)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
69.25 *(51.64)*	2381	3.972 *(15.036)*	0.400 *(0.244)*	17.43 *(3.435)*	189 *(86.9)*	63 *(17.0)*	75 *(23.9)*	28.76 *(97.12)*
Standard Power Take-off Speed (540 rpm) — One Hour								
65.40 *(48.77)*	2199	3.683 *(13.941)*	0.393 *(0.239)*	17.76 *(3.499)*	188 *(86.5)*	64 *(17.8)*	75 *(23.8)*	28.78 *(97.19)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
64.09 *(47.79)*	2660	3.850 *(14.576)*	0.419 *(0.255)*	16.64 *(3.279)*	186 *(85.6)*	63 *(17.2)*	76 *(24.4)*	—
0.00 *(0.00)*	2732	1.238 *(4.685)*	—	—	178 *(80.8)*	63 *(16.9)*	76 *(24.2)*	—
32.52 *(24.25)*	2699	2.411 *(9.126)*	0.518 *(0.315)*	13.49 *(2.657)*	180 *(81.9)*	63 *(16.9)*	75 *(23.6)*	—
70.49 *(52.56)*	2501	4.207 *(15.926)*	0.417 *(0.253)*	16.75 *(3.301)*	189 *(87.2)*	63 *(17.2)*	76 *(24.2)*	—
16.39 *(12.22)*	2724	1.788 *(6.767)*	0.761 *(0.463)*	9.17 *(1.806)*	178 *(81.1)*	63 *(17.2)*	76 *(24.4)*	—
48.31 *(36.02)*	2674	3.111 *(11.778)*	0.450 *(0.274)*	15.53 *(3.059)*	182 *(83.3)*	64 *(17.8)*	76 *(24.4)*	—
Av **38.63** *Av (28.81)*	**2668**	**2.768** *(10.476)*	**0.500** *(0.304)*	**13.96** *(2.750)*	**182** *(83.3)*	**63** *(17.2)*	**76** *(24.2)*	**28.78** *(97.17)*

DRAWBAR PERFORMANCE

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F *(°C)* Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-1) Gear											
60.77 *(45.32)*	4096 *(18.22)*	5.56 *(8.95)*	2499	5.90	4.118 *(15.590)*	0.473 *(0.288)*	14.76 *(2.907)*	190 *(87.5)*	59 *(14.7)*	75 *(23.6)*	29.00 *(97.91)*
75% of Pull at Maximum Power — Ten Hours 8th (III-1) Gear											
50.21 *(37.44)*	3113 *(13.85)*	6.05 *(9.73)*	2667	4.07	3.564 *(13.491)*	0.496 *(0.301)*	14.09 *(2.775)*	188 *(86.4)*	61 *(16.2)*	73 *(22.8)*	28.70 *(96.90)*
50% of Pull at Maximum Power — Two Hours 8th (III-1) Gear											
34.22 *(25.52)*	2075 *(9.23)*	6.18 *(9.95)*	2696	3.00	2.786 *(10.547)*	0.568 *(0.346)*	12.28 *(2.419)*	181 *(82.8)*	55 *(12.8)*	64 *(17.8)*	29.02 *(97.98)*
50% of Pull at Reduced Engine Speed — Two Hours 10th (III-2) Gear											
34.25 *(25.52)*	2074 *(9.23)*	6.19 *(9.96)*	1748	2.87	2.235 *(8.459)*	0.456 *(0.277)*	15.32 *(3.017)*	180 *(82.2)*	55 *(12.8)*	71 *(21.7)*	29.00 *(97.91)*
MAXIMUM POWER IN SELECTED GEARS											
55.08 *(41.07)*	7525 *(33.47)*	2.82 *(4.54)*	2570	14.90	5th (I-4) Gear			181 *(82.8)*	52 *(11.1)*	56 *(13.3)*	28.98 *(97.86)*
57.92 *(43.19)*	6303 *(28.03)*	3.45 *(5.55)*	2499	10.95	6th (II-2) Gear			189 *(86.9)*	58 *(14.4)*	71 *(21.7)*	29.06 *(98.11)*
59.84 *(44.62)*	5132 *(22.83)*	4.37 *(7.04)*	2500	7.78	7th (II-3) Gear			189 *(87.2)*	58 *(14.4)*	72 *(22.2)*	29.05 *(98.10)*
61.52 *(45.88)*	4150 *(18.46)*	5.56 *(8.95)*	2498	5.87	8th (III-1) Gear			190 *(87.8)*	59 *(15.0)*	75 *(23.9)*	29.01 *(97.96)*
59.40 *(44.29)*	3088 *(13.73)*	7.21 *(11.61)*	2499	4.20	9th (II-4) Gear			190 *(87.5)*	59 *(15.0)*	73 *(22.8)*	29.04 *(98.06)*
59.72 *(44.53)*	2547 *(11.33)*	8.79 *(14.15)*	2499	3.58	10th (III-2) Gear			189 *(86.9)*	59 *(15.0)*	74 *(23.3)*	29.03 *(98.03)*

Department of Agricultural Engineering

Dates of Test: April 22 to May 7, 1985

Manufacturer: FIAT TRATTORI, S.p.A. Via Picodella, Mirandola 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3(rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8384 **Fuel weight** 6.981 **lbs/gal** *(0.837 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 2.975 **gal** *(11.261 l)* **Drained from motor** 2.579 gal *(9.762 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 40.5 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** four cylinder vertical **Serial No.** 8045.05*205-024124* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.094" × 4.527" *(104 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 238.5 cu in *(3908 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** two paper elements **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard **Serial No.** *80-90/12*527470* **Tread width** rear 63" *(1600 mm)* to 82.7" *(2100 mm)* front 55.1" *(1400 mm)* to 74.8" *(1900 mm)* **Wheel base** 92.2" *(2342 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30.7" *(781 mm)* Vertical distance above roadway 38.2" *(970 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 1.1 *(1.7)* second 1.7 *(2.7)* third 2.0 *(3.2)* fourth 2.5 *(4.0)* fifth 3.2 *(5.2)* sixth 3.9 *(6.3)* seventh 4.8 *(7.7)* eighth 6.0 *(9.6)* ninth 7.6 *(12.2)* tenth 9.2 *(14.8)* eleventh 11.3 *(18.2)* twelfth 18.0 *(28.9)* reverse 2.8 *(4.5)*, 4.3 *(6.9)*, 5.2 *(8.4)*, 8.4 *(13.5)*. **Clutch** dry disc operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 134" *(3.40 m)* left 134" *(3.40 m)*(on concrete surface without brake) right 154" *(3.91 m)* left 154" *(3.91 m)* **Turning space diameter** (on concrete surface with brake applied) right 276" *(7.01 m)* left 276" *(7.01 m)*(on concrete surface without brake) right 316" *(8.03 m)* left 316" *(8.03 m)* **Power take-off** 540 rpm at 2199 engine rpm and 1000 rpm at 2381 engine rpm **Unladen tractor mass** 7130 lb *(3234 kg)*.

LUGGING ABILITY IN 8th (III-1) GEAR

Crankshaft Speed rpm	2498	2256	1997	1748	1492	1246	998
Pull—lbs *(kN)*	4150 *(18.46)*	4320 *(19.22)*	4431 *(19.71)*	4630 *(20.60)*	4777 *(21.25)*	4818 *(21.43)*	4006 *(17.82)*
Increase in Pull %	0	4	7	12	15	16	−3
Power—Hp *(kW)*	61.52 *(45.88)*	57.69 *(43.02)*	52.25 *(38.96)*	47.61 *(35.51)*	41.78 *(31.16)*	35.16 *(26.22)*	23.75 *(17.71)*
Speed—Mph *(km/h)*	5.56 *(8.95)*	5.01 *(8.06)*	4.42 *(7.12)*	3.86 *(6.21)*	3.28 *(5.28)*	2.74 *(4.40)*	2.22 *(3.58)*
Slip %	5.87	6.19	6.32	6.58	7.09	7.09	5.80

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
Maximum Available Power—Two Hours	80.0
75% of Pull at Maximum Power—Ten Hours	81.0
50% of Pull at Maximum Power—Two Hours	81.0
50% of Pull at Reduced Engine Speed—Two Hours	74.5
Bystander in 12th (III-4) gear	86.0

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-30; 6; 16 *(110)*	Two 18.4-30; 6; 16 *(110)*
Ballast	—Liquid (each)	658 lb *(298 kg)*	None
	—Cast Iron (each)	390 lb *(177 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 7.50-16; 6; 40 *(275)*	Two 7.50-16; 6; 40 *(275)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	30 lb *(14 kg)*	None
Height of Drawbar		20 in *(510 mm)*	20 in *(510 mm)*
Static Weight with Operator	—Rear	7035 lb *(3191 kg)*	4940 lb *(2241 kg)*
	—Front	2430 lb *(1102 kg)*	2570 lb *(1075 kg)*
	—Total	9465 lb *(4293 kg)*	7510 lb *(3316 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2700	*(18620)*	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	175	*(79)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	4898	*(2222)*	
TIME sec	2.17		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	10.3	*(262)*	
Top of timed range	34.4	*(874)*	
Highest position	36.6	*(930)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	10.2	*(259)*	
Top of timed range	36.6	*(930)*	
Highest position	39.9	*(1013)*	

*Implement load capacity for transport purposes not specified by manufacturer

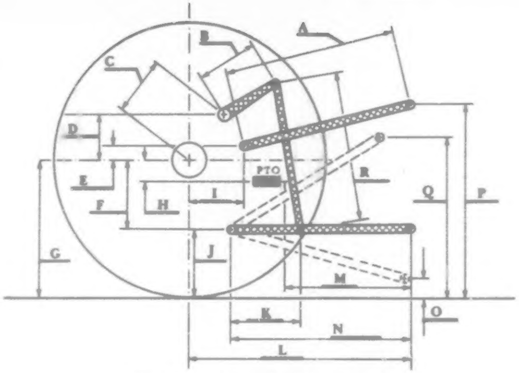
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 148°F *(64.4°C)*. Six gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. 1563, June 19, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	27.4	*695*
B	10.0	*255*
C	13.8	*350*
D	11.8	*300*
E	9.8	*250*
F	7.9	*200*
G	27.0	*686*
H	0.6	*16*
I	15.0	*380*
J	19.1	*486*
K	17.7	*450*
L	43.3	*1100*
M	23.2	*590*
N	37.8	*960*
O	8.0	*203*
P	38.1	*968*
Q	36.0	*914*
R	22.9	*581*

Hesston 80-90 Fiat Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1580—HESSTON 100-90 FIAT DIESEL 15 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crankshaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 1038 rpm)								
91.52 *(68.24)*	2500	5.725 *(21.673)*	0.439 *(0.267)*	15.98 *(3.149)*	196 *(90.9)*	63 *(17.2)*	75 *(23.8)*	28.84 *(97.39)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
90.57 *(67.54)*	2409	5.578 *(21.116)*	0.432 *(0.263)*	16.24 *(3.198)*	196 *(91.2)*	63 *(17.2)*	74 *(23.1)*	28.92 *(97.66)*
Standard Power Take-off Speed (540 rpm) — One Hour								
87.16 *(64.99)*	2124	5.139 *(19.453)*	0.413 *(0.251)*	16.96 *(3.341)*	199 *(93.0)*	66 *(18.7)*	75 *(23.8)*	29.00 *(97.93)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
81.66 *(60.89)*	2625	5.199 *(19.680)*	0.446 *(0.272)*	15.71 *(3.094)*	190 *(87.8)*	64 *(17.8)*	75 *(23.6)*	—
0.00 *(0.00)*	2748	1.951 *(7.386)*	—	—	175 *(79.4)*	64 *(17.8)*	75 *(23.9)*	—
41.77 *(31.15)*	2683	3.320 *(12.569)*	0.557 *(0.339)*	12.58 *(2.478)*	182 *(83.3)*	64 *(17.5)*	74 *(23.3)*	—
91.30 *(68.08)*	2501	5.712 *(21.624)*	0.439 *(0.267)*	15.98 *(3.149)*	197 *(91.4)*	66 *(18.9)*	77 *(25.0)*	—
21.20 *(15.81)*	2725	2.632 *(9.962)*	0.870 *(0.529)*	8.06 *(1.587)*	178 *(81.1)*	65 *(18.3)*	75 *(23.9)*	—
62.05 *(46.26)*	2661	4.223 *(15.987)*	0.477 *(0.290)*	14.69 *(2.893)*	189 *(87.2)*	65 *(18.3)*	75 *(23.9)*	—
Av 49.66 **Av *(37.03)***	**2657**	**3.840** ***(14.535)***	**0.542** ***(0.330)***	**12.93** ***(2.548)***	**185** ***(85.0)***	**65** ***(18.1)***	**75** ***(23.9)***	**28.95** ***(97.75)***

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 11th (III-1) Gear											
77.98 *(58.15)*	4602 *(20.47)*	6.35 *(10.23)*	2500	4.89	5.727 *(21.678)*	0.515 *(0.313)*	13.62 *(2.682)*	193 *(89.2)*	45 *(7.2)*	54 *(12.2)*	28.88 *(97.52)*
75% of Pull at Maximum Power — Ten Hours 11th (III-1) Gear											
63.16 *(47.10)*	3487 *(15.51)*	6.79 *(10.93)*	2666	4.71	4.948 *(18.730)*	0.549 *(0.334)*	12.76 *(2.515)*	186 *(85.6)*	37 *(2.5)*	37 *(3.0)*	29.15 *(98.45)*
50% of Pull at Maximum Power — Two Hours 11th (III-1) Gear											
43.19 *(32.21)*	2324 *(10.34)*	6.97 *(11.22)*	2687	2.93	4.044 *(15.307)*	0.656 *(0.399)*	10.68 *(2.104)*	183 *(83.6)*	37 *(2.5)*	39 *(3.6)*	29.14 *(98.38)*
50% of Pull at Reduced Engine Speed — Two Hours 13th (III-3) Gear											
43.21 *(32.22)*	2323 *(10.33)*	6.98 *(11.23)*	1536	2.70	3.074 *(11.635)*	0.499 *(0.303)*	14.06 *(2.769)*	183 *(83.6)*	40 *(4.2)*	42 *(5.6)*	29.14 *(98.40)*
MAXIMUM POWER IN SELECTED GEARS											
66.40 *(49.52)*	9911 *(44.09)*	2.51 *(4.04)*	2624	14.87	7th (II-2) Gear			184 *(84.4)*	44 *(6.7)*	48 *(8.9)*	28.77 *(97.15)*
77.57 *(57.85)*	8907 *(39.62)*	3.27 *(5.26)*	2499	11.50	8th (II-3) Gear			192 *(88.6)*	43 *(6.1)*	48 *(8.9)*	28.78 *(97.19)*
78.53 *(58.56)*	6920 *(30.78)*	4.26 *(6.85)*	2500	7.92	9th (II-4) Gear			192 *(88.9)*	44 *(6.7)*	49 *(9.4)*	28.79 *(97.22)*
77.85 *(58.05)*	5353 *(23.81)*	5.45 *(8.78)*	2499	5.73	10th (II-5) Gear			191 *(88.3)*	45 *(7.2)*	52 *(11.1)*	28.83 *(97.35)*
78.72 *(58.70)*	4646 *(20.66)*	6.35 *(10.23)*	2500	4.92	11th (III-1) Gear			193 *(89.4)*	45 *(7.2)*	54 *(12.2)*	28.90 *(97.59)*
74.98 *(55.91)*	3274 *(14.56)*	8.59 *(13.82)*	2500	3.73	12th (III-2) Gear			191 *(88.1)*	44 *(6.7)*	49 *(9.4)*	28.80 *(97.25)*

Department of Agricultural Engineering

Dates of Test: October 3 to 10, 1985

Manufacturer: FIAT TRATTORI S.p.A. Via Picodella Mirandola 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8420 **Fuel weight** 7.011 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W40 **API service classification** SF-CD **To motor** 3.596 gal *(13.611 l)* **Drained from motor** 3.133 gal *(11.858 l)* **Transmission and final drive lubricant** Hesston M&PS 705106016 fluid **Total time engine was operated** 37.0 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** six cylinder vertical **Serial No.** 8065.06*200-042299* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.937" × 4.527" *(100 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 331 cu in *(5419 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** two full flow cartridges **Fuel filter** two paper cartridges and water separator **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 100-90DT/15*248971* **Tread width** rear 63" *(1600 mm)* to 86.5" *(2197 mm)* front 67.5" *(1714 mm)* to 84.5" *(2146 mm)* **Wheel base** 93.8" *(2384 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 37.1" *(942 mm)* Vertical distance above roadway 37.8" *(960 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 0.7 *(1.1)* second 0.8 *(1.3)* third 1.1 *(1.8)* fourth 1.4 *(2.3)* fifth 1.8 *(2.9)* sixth 2.0 *(3.3)* seventh 2.7 *(4.4)* eighth 3.6 *(5.8)* ninth 4.5 *(7.3)* tenth 5.6 *(9.1)* eleventh 6.5 *(10.5)* twelfth 8.7 *(14.0)* thirteenth 11.5 *(18.5)* fourteenth 14.3 *(23.1)* fifteenth 18.0 *(29.0)* reverse 0.8 *(1.3)*, 2.7 *(4.3)*, 8.6 *(13.9)* **Clutch** dry disc operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 197" *(5.00 m)* left 197" *(5.00 m)*(on concrete surface without brake) right 219" *(5.56 m)* left 219" *(5.56 m)* **Turning space diameter** (on concrete surface with brake applied) right 409" *(10.39 m)* left 409" *(10.39 m)*(on concrete surface without brake) right 453" *(11.51 m)* left 453" *(11.51 m)* **Power take-off** 540 rpm at 2124 engine rpm and 1000 rpm at 2409 engine rpm **Unladen tractor mass** 9540 lb *(4327 kg)*.

LUGGING ABILITY IN 11th (III-1) GEAR

Crankshaft Speed rpm	2500	2256	2000	1747	1496	1248
Pull—lbs *(kN)*	4646 *(20.66)*	5019 *(22.33)*	5451 *(24.25)*	5702 *(25.36)*	5755 *(25.60)*	5683 *(25.28)*
Increase in Pull %	0	8	17	23	24	22
Power—Hp *(kW)*	78.72 *(58.70)*	76.40 *(56.97)*	73.11 *(54.52)*	66.62 *(49.68)*	57.51 *(42.89)*	47.42 *(35.36)*
Speed—Mph *(km/h)*	6.35 *(10.23)*	5.71 *(9.19)*	5.03 *(8.09)*	4.38 *(7.05)*	3.75 *(6.03)*	3.13 *(5.04)*
Slip %	4.92	5.44	5.87	6.30	6.30	6.30

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Available Power—Two Hours	78.0	78.5
75% of Pull at Maximum Power—Ten Hours		79.0
50% of Pull at Maximum Power—Two Hours		78.0
50% of Pull at Reduced Engine Speed—Two Hours		74.5
Bystander in 15th (III-5) gear	86.5	

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 11th (III-1) Gear											
78.90 *(58.84)*	4875 *(21.69)*	6.07 *(9.77)*	2500	6.68	5.712 *(21.624)*	0.508 *(0.309)*	13.81 *(2.721)*	192 *(88.9)*	44 *(6.7)*	51 *(10.6)*	28.94 *(97.73)*
MAXIMUM POWER IN SELECTED GEARS											
63.09 *(47.04)*	7383 *(32.84)*	3.20 *(5.16)*	2627	14.80	8th (II-3) Gear			184 *(84.4)*	44 *(6.7)*	48 *(8.9)*	28.78 *(97.19)*
72.79 *([illegible])*	5620 *(25.00)*	5.19 *(8.35)*	2499	7.90	10th (II-5) Gear			192 *(88.6)*	45 *(7.2)*	52 *(11.1)*	28.82 *(97.32)*
79.42 *(59.22)*	4906 *(21.82)*	6.07 *(9.77)*	2500	6.61	11th (III-1) Gear			193 *(89.4)*	44 *(6.7)*	51 *(10.6)*	28.85 *(97.43)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-34; 6; 16 *(110)*	Two 18.4-34; 6; 16 *(110)*
Ballast	—Liquid (each)	550 lb *(250 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 14.9-24; 6; 16 *(110)*	Two 14.9-24; 6; 16 *(110)*
Ballast	—Liquid (each)	380 lb *(172 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		17.5 in *(445 mm)*	17.5 in *(445 mm)*
Static Weight with Operator	—Rear	7250 lb *(3289 kg)*	6150 lb *(2790 kg)*
	—Front	4330 lb *(1964 kg)*	3570 lb *(1619 kg)*
	—Total	11580 lb *(5253 kg)*	9720 lb *(4409 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 160 °F *(71.0°C)*. Six gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1580**, December 6, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

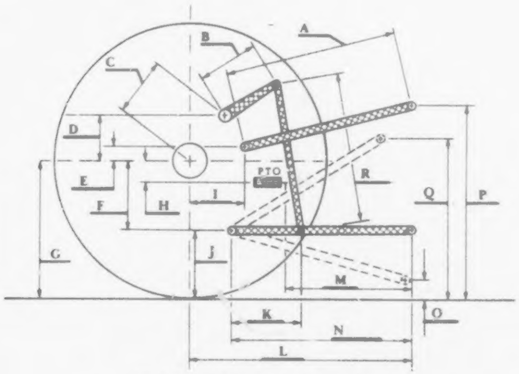
Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	** 2975	*(20510)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	200	*(93)*	
Location	hydraulic filter		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	5852	*(2654)*	
TIME sec	7.94		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	11.7	*(297)*	
Top of timed range	35.7	*(906)*	
Highest position	36.4	*(924)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.7	*(297)*	
Top of timed range	37.3	*(947)*	
Highest position	39.0	*(991)*	

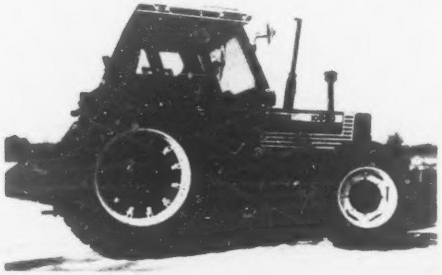
*Implement load capacity for transport purposes not specified by manufacturer.

** The observed maximum pressure at 1600 rpm, 2875 psi *(19820 kPa)* was outside the range specified by the manufacturer: 2700-2828 psi *(18615-19500 kPa)* at 1500-1700 rpm. The observed maximum pressure at rated engine speed was 2975 psi *(20510 kPa)*.



	inch	*mm*
A	29.0	*737*
B	9.0	*230*
C	15.3	*390*
D	14.1	*359*
E	8.1	*206*
F	9.3	*236*
G	29.2	*741*
H	1.3	*33*
I	14.4	*367*
J	19.9	*505*
K	17.5	*445*
L	44.1	*1120*
M	22.4	*570*
N	39.0	*990*
O	7.9	*200*
P	38.9	*987*
Q	34.6	*879*
R	28.4	*721*

Hitch Dimensions as Tested — No Load



Hesston 100-90 Diesel

NEBRASKA TRACTOR TEST 1564—HESSTON 130-90DT TURBO FIAT DIESEL ALSO HESSTON 130-90 TURBO FIAT DIESEL

16 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F *(°C)* Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1017 rpm)								
107.48 *(80.15)*	2500	6.616 *(25.045)*	0.430 *(0.261)*	16.25 *(3.201)*	185 *(84.9)*	60 *(15.3)*	75 *(23.7)*	28.77 *(97.14)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
106.80 *(79.64)*	2458	6.499 *(24.603)*	0.425 *(0.258)*	16.43 *(3.237)*	184 *(84.5)*	60 *(15.6)*	75 *(24.1)*	28.79 *(97.22)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
95.78 *(71.42)*	2621	6.371 *(24.115)*	0.464 *(0.282)*	15.03 *(2.962)*	183 *(83.9)*	60 *(15.3)*	75 *(23.9)*	....
0.00 *(0.00)*	2772	2.510 *(9.503)*	....	....	176 *(79.7)*	59 *(15.0)*	74 *(23.1)*	....
49.57 *(36.97)*	2712	4.539 *(17.183)*	0.639 *(0.389)*	10.92 *(2.151)*	178 *(81.1)*	60 *(15.3)*	75 *(23.9)*	....
107.64 *(80.26)*	2501	6.641 *(25.140)*	0.431 *(0.262)*	16.21 *(3.193)*	185 *(84.7)*	60 *(15.3)*	76 *(24.2)*	....
25.03 *(18.67)*	2740	3.568 *(13.506)*	0.995 *(0.605)*	7.09 *(1.382)*	176 *(80.0)*	60 *(15.3)*	75 *(23.9)*	....
73.47 *(54.79)*	2680	5.498 *(20.811)*	0.522 *(0.318)*	13.36 *(2.633)*	181 *(82.8)*	59 *(15.0)*	76 *(24.2)*	....
Av 58.58 **Av *(43.68)***	**2671**	**4.855** ***(18.377)***	**0.578** ***(0.332)***	**12.07** ***(2.377)***	**180** ***(82.0)***	**59** ***(15.0)***	**75** ***(23.8)***	**28.80** ***(97.24)***

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F *(°C)* Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-2) Gear											
90.47 *(67.47)*	6513 *(28.97)*	5.21 *(8.38)*	2500	3.66	6.541 *(24.761)*	0.505 *(0.307)*	13.83 *(2.725)*	183 *(83.9)*	61 *(15.8)*	67 *(19.4)*	29.01 *(97.96)*
75% of Pull at Maximum Power — Ten Hours 8th (III-2) Gear											
73.53 *(54.83)*	4946 *(22.00)*	5.58 *(8.97)*	2648	2.61	6.044 *(22.878)*	0.574 *(0.349)*	12.17 *(2.397)*	182 *(83.3)*	59 *(14.9)*	68 *(19.9)*	29.09 *(98.23)*
50% of Pull at Maximum Power — Two Hours 8th (III-2) Gear											
50.11 *(37.37)*	3275 *(14.57)*	5.74 *(9.23)*	2705	1.81	5.087 *(19.255)*	0.708 *(0.431)*	9.85 *(1.941)*	180 *(82.2)*	63 *(16.9)*	64 *(17.5)*	28.85 *(97.42)*
50% of Pull at Reduced Engine Speed — Two Hours 12th (III-4) Gear											
50.10 *(37.36)*	3277 *(14.57)*	5.73 *(9.23)*	1805	1.90	3.661 *(13.858)*	0.510 *(0.310)*	13.69 *(2.696)*	178 *(81.1)*	62 *(16.7)*	63 *(17.2)*	28.84 *(97.39)*

Department of Agricultural Engineering

Dates of Test: April 18 to May 4, 1985

Manufacturer: FIAT TRATTORI, S.p.A. Via Picodella, Mirandola 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F *(15/15°C)*** 0.8382 **Fuel weight** 6.979 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 4.183 gal *(15.835 l)* **Drained from motor** 3.523 gal *(13.337 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 47.0 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 8065.25*010-016115* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.094" × 4.527" *(104 mm × 115 mm)* **Compression ratio** 16.5 to 1 **Displacement** 358 cu in *(5861 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil **Fuel filter** two paper cartridges and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist with duals **Serial No.** *130-90DT/1S*256828* **Tread width** rear 60" *(1524 mm)* to 129" *(3277 mm)* front 64" *(1625 mm)* to 92" *(2337 mm)* **Wheel base** 105.1" *(2670 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center- line of rear wheels 33.2" *(843 mm)* Vertical distance above roadway 42.5" *(1080 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 1.9 *(3.1)* second 2.4 *(3.8)* third 2.9 *(4.6)* fourth 3.5 *(5.7)* fifth 3.9 *(6.3)* sixth 4.3 *(7.0)* seventh 4.8 *(7.7)* eighth 5.3 *(8.6)* ninth 5.8 *(9.3)* tenth 6.5 *(10.4)* eleventh 7.2 *(11.6)* twelfth 7.9 *(12.8)* thirteenth 9.8 *(15.8)* fourteenth 12.0 *(19.3)* fifteenth 14.5 *(23.4)* sixteenth 18.0 *(29.0)* reverse 1.6 *(2.5)*, 1.9 *(3.0)*, 2.3 *(3.7)*, 2.8 *(4.6)*, 3.1 *(5.0)* 3.5 *(5.6)*, 3.9 *(6.2)*, 4.2 *(6.8)*, 4.7 *(7.5)*, 5.2 *(8.3)*, 5.8 *(9.3)*, 6.4 *(10.3)*, 7.9 *(12.7)*, 9.6 *(15.5)*, 11.6 *(18.7)*, 14.4 *(23.2)* **Clutch** single dry disc hydraulically operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 202" *([illegible].14 m)* left 204" *(5.18 m)*(on

MAXIMUM POWER IN SELECTED GEARS

81.31 *(60.63)*	14850 *(66.05)*	2.05 *(3.30)*	2506	14.89	2nd (I-2) Gear	181 *(82.8)*	53 *(11.7)*	61 *(16.1)*	29.11 *(98.30)*
88.23 *(65.79)*	12434 *(55.31)*	2.66 *(4.28)*	2500	8.62	3rd (I-3) Gear	181 *(82.8)*	55 *(12.8)*	58 *(14.4)*	29.00 *(97.93)*
90.07 *(67.17)*	9987 *(44.42)*	3.38 *(5.44)*	2500	6.17	4th (I-4) Gear	181 *(82.8)*	55 *(12.8)*	58 *(14.4)*	29.00 *(97.93)*
91.11 *(67.94)*	9051 *(40.26)*	3.78 *(6.08)*	2500	5.40	5th (II-1) Gear	182 *(83.1)*	55 *(12.8)*	58 *(14.4)*	29.00 *(97.93)*
91.44 *(68.19)*	8127 *(36.15)*	4.22 *(6.79)*	2500	4.62	6th (III-1) Gear	182 *(83.1)*	55 *(12.8)*	58 *(14.4)*	29.00 *(97.93)*
91.59 *(68.30)*	7351 *(32.70)*	4.67 *(7.52)*	2501	4.14	7th (II-2) Gear	181 *(82.8)*	55 *(12.8)*	58 *(14.4)*	29.00 *(97.93)*
91.56 *(68.28)*	6594 *(29.33)*	5.21 *(8.38)*	2499	3.58	8th (III-2) Gear	183 *(83.9)*	61 *(16.1)*	68 *(20.0)*	29.01 *(97.96)*
90.31 *(67.35)*	5943 *(26.43)*	5.70 *(9.17)*	2500	3.25	9th (II-3) Gear	181 *(82.8)*	56 *(13.3)*	59 *(15.0)*	29.00 *(97.93)*
89.74 *(66.92)*	5300 *(23.57)*	6.35 *(10.22)*	2501	2.93	10th (III-3) Gear	181 *(82.8)*	56 *(13.3)*	60 *(15.6)*	29.01 *(97.96)*
88.80 *(66.22)*	4684 *(20.83)*	7.11 *(11.44)*	2498	2.44	11th (II-4) Gear	182 *(83.1)*	57 *(13.9)*	61 *(16.1)*	29.01 *(97.96)*
87.19 *(65.02)*	4132 *(18.38)*	7.91 *(12.73)*	2498	2.11	12th (III-4) Gear	182 *(83.3)*	58 *(14.4)*	62 *(16.7)*	29.01 *(97.96)*
85.41 *(63.69)*	3263 *(14.51)*	9.82 *(15.80)*	2499	1.60	13th (IV-1) Gear	182 *(83.3)*	59 *(15.0)*	63 *(17.2)*	29.01 *(97.96)*

LUGGING ABILITY IN 8th (III-2) GEAR

Crankshaft Speed rpm	2499	2246	2001	1748	1488	1242
Pull—lbs *(kN)*	6594 *(29.33)*	7043 *(31.33)*	7411 *(32.97)*	7563 *(33.64)*	7437 *(33.08)*	6950 *(30.91)*
Increase in Pull %	0	7	12	15	13	5
Power—Hp *(kW)*	91.56 *(68.28)*	87.65 *(65.36)*	81.94 *(61.11)*	72.92 *(54.38)*	61.07 *(45.54)*	47.81 *(35.65)*
Speed—Mph *(km/h)*	5.21 *(8.38)*	4.67 *(7.51)*	4.15 *(6.67)*	3.62 *(5.82)*	3.08 *(4.96)*	2.58 *(4.15)*
Slip %	3.58	3.90	4.22	4.22	4.22	3.90

	Front Wheel Drive	
TRACTOR SOUND LEVEL WITH CAB	**Disengaged dB(A)**	**Engaged dB(A)**
Maximum Available Power—Two Hours	77.5	77.5
75% of Pull at Maximum Power—Ten Hours		83.0
50% of Pull at Maximum Power—Two Hours		81.5
50% of Pull at Reduced Engine Speed—Two Hours		77.0
Bystander in 15th (IV-3) gear	86.0	—

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cooling med	Temp. °F (°C) Air wet bulb	Temp. °F (°C) Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-2) Gear											
89.39 *(66.66)*	6552 *(29.14)*	5.12 *(8.23)*	2499	5.10	6.555 *(24.815)*	0.512 *(0.311)*	13.64 *(2.686)*	184 *(84.2)*	63 *(16.9)*	70 *(20.8)*	29.00 *(97.91)*

MAXIMUM POWER IN SELECTED GEARS

80.40 *(59.96)*	11805 *(52.51)*	2.55 *(4.11)*	2580	14.79	3rd (I-3) Gear	180 *(82.2)*	50 *(10.0)*	57 *(13.9)*	29.08 *(98.20)*
90.38 *(67.39)*	7400 *(32.92)*	4.58 *(7.37)*	2501	5.84	7th (II-2) Gear	182 *(83.1)*	56 *(13.3)*	59 *(15.0)*	29.00 *(97.93)*
90.77 *(67.68)*	6653 *(29.59)*	5.12 *(8.23)*	2500	5.14	8th (III-2) Gear	183 *(83.9)*	63 *(17.2)*	70 *(21.1)*	28.99 *(97.89)*

concrete surface without brake) right 241" *(6.12 m)* left 241" *(6.12 m)* **Turning space diameter** (on concrete surface with brake applied) right 419" *(10.65 m)* left 423" *(10.73 m)*(on concrete surface without brake) right 497" *(12.63 m)* left 497" *(12.63 m)* **Power take-off** 540 rpm at 2261 engine rpm and 1000 rpm at 2458 engine rpm **Unladen tractor mass** 14240 lb *(6459 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 137°F *(58.3°C)*. Twelve gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1564,** June 19, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

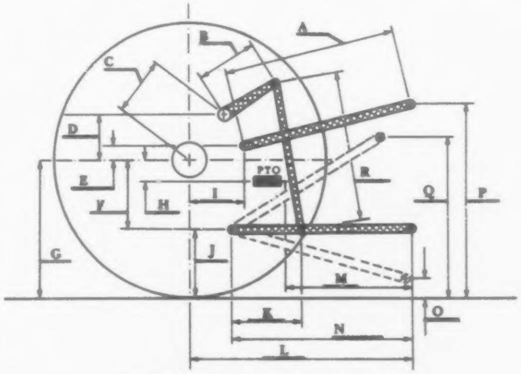
K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Four 18.4-38, 8; 16 *(110)*	Four 18.4-38, 8; 16 *(110)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	61 lb *(28 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 14.9-28; 6; 20 *(140)*	Two 14.9-28; 6; 20 *(140)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	208 lb *(94 kg)*	None
Height of Drawbar		18 in *(455 mm)*	18 in *(455 mm)*
Static Weight with Operator	—Rear	11055 lb *(5014 kg)*	10810 lb *(4903 kg)*
	—Front	5330 lb *(2418 kg)*	4915 lb *(2229 kg)*
	—Total	16385 lb *(7432 kg)*	15725 lb *(7132 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2450	*(16890)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	192	*(89)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	6976	*(3164)*	
TIME sec	2.01		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	10.1	*(257)*	
Top of timed range	34.2	*(869)*	
Highest position	36.0	*(914)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.3	*(287)*	
Top of timed range	33.9	*(861)*	
Highest position	35.8	*(909)*	

*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.1	*791*
B	10.[illegible]	*275*
C	16.9	*430*
D	16.1	*409*
E	9.0	*229*
F	11.0	*280*
G	32.8	*832*
H	2.5	*64*
I	16.7	*425*
J	21.8	*552*
K	21.5	*546*
L	48.5	*1232*
M	26.2	*665*
N	40.0	*1016*
O	8.0	*203*
P	40.8	*1035*
Q	36.3	*921*
R	34.9	*886*

NEBRASKA TRACTOR TEST 1533—HESSTON 140-90DT TURBO FIAT DIESEL ALSO HESSTON 140-90 TURBO FIAT DIESEL 16 SPEED

Department of Agricultural Engineering

Dates of Test: August 29-September 7, 1984

Manufacturer: FIAT TRATTORI, S.p.A. Via Picodella Mirandola, 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8377 **Fuel weight** 6.975 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 3.471 gal *(13.139 l)* **Drained from motor** 3.252 gal *(12.310 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 42.5 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 8065.25*000-004695* **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.094" × 4.527" *(104 mm × 115 mm)* **Compression ratio** 16.5 to 1 **Displacement** 358 cu in *(5861 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil **Fuel filter** two paper cartridges and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

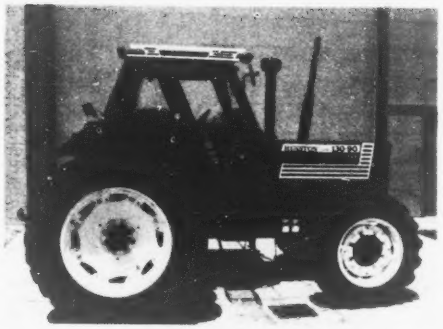
CHASSIS: Type front wheel assist with duals **Serial No.** 160-90DT/13*259142* **Tread width** rear 60" *(1524 mm)* to 129" *(3277 mm)* front 64" *(1625 mm)* to 92" *(2337 mm)* **Wheel base** 105.1" *(2670 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 34.6" *(880 mm)* Vertical distance above roadway 42.5" *(1080 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 1.9 *(3.1)* second 2.4 *(3.8)* third 2.9 *(4.6)* fourth 3.5 *(5.7)* fifth 3.9 *(6.3)* sixth 4.3 *(6.9)* seventh 4.8 *(7.7)* eighth 5.3 *(8.6)* ninth 5.8 *(9.3)* tenth 6.5 *(10.4)* eleventh 7.2 *(11.6)* twelfth 7.9 *(12.7)* thirteenth 9.8 *(15.8)* fourteenth 12.0 *(19.3)* fifteenth 14.5 *(23.3)* sixteenth 18.0 *(29.0)* reverse 1.5 *(2.4)*, 1.9 *(3.0)*, 2.3 *(3.7)*, 2.8 *(4.6)*, 3.1 *(5.0)*, 3.5 *(5.6)*, 3.9 *(6.2)*, 4.2 *(6.8)*, 4.7 *(7.5)*, 5.2 *(8.3)*, 5.8 *(9.3)*, 6.4 *(10.3)*, 7.9 *(12.7)*, 9.6 *(15.5)*, 11.6 *(18.7)*, 14.4 *(23.2)* **Clutch** single dry disc hydraulically operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 202" *(5.14 m)* left 204" *(5.18 m)* (on

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1017 rpm)								
123.35 *(91.98)*	2500	7.295 *(27.610)*	0.412 *(0.251)*	16.91 *(3.332)*	188 *(86.9)*	64 *(17.9)*	75 *(24.0)*	28.96 *(97.80)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
122.83 *(91.60)*	2459	7.173 *(27.149)*	0.407 *(0.248)*	17.12 *(3.374)*	189 *(86.9)*	63 *(16.9)*	75 *(24.1)*	28.95 *(97.76)*
VARYING POWER AND FUEL CONSUMPTION - Two Hours								
108.67 *(81.03)*	2590	6.834 *(25.870)*	0.439 *(0.267)*	15.90 *(3.132)*	186 *(85.3)*	61 *(16.1)*	75 *(23.9)*	
0.00 *(0.00)*	2748	2.473 *(9.362)*	—	—	178 *(81.1)*	61 *(16.1)*	75 *(23.6)*	
56.23 *(41.93)*	2682	4.692 *(17.762)*	0.582 *(0.354)*	11.98 *(2.361)*	184 *(84.2)*	61 *(16.1)*	75 *(23.6)*	
122.89 *(91.64)*	2501	7.282 *(27.564)*	0.413 *(0.251)*	16.88 *(3.325)*	190 *(87.8)*	62 *(16.7)*	76 *(24.2)*	
28.42 *(21.19)*	2709	3.566 *(13.497)*	0.875 *(0.532)*	7.97 *(1.570)*	179 *(81.7)*	62 *(16.7)*	76 *(24.4)*	
82.79 *(61.73)*	2632	5.755 *(21.784)*	0.495 *(0.295)*	14.39 *(2.834)*	188 *(86.7)*	63 *(16.9)*	76 *(24.4)*	
Av **66.50** Av *(49.59)*	**2643**	**5.100** *(19.306)*	**0.535** *(0.325)*	**13.04** *(2.568)*	**184** *(84.4)*	**62** *(16.4)*	**75** *(24.0)*	**28.94** *(97.71)*

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-2) Gear											
104.17 *(77.68)*	7737 *(34.42)*	5.05 *(8.13)*	2500	5.89	7.233 *(27.380)*	0.484 *(0.295)*	14.40 *(2.837)*	190 *(87.8)*	61 *(15.8)*	73 *(22.8)*	29.11 *(98.58)*
75% of Pull at Maximum Power — Ten Hours 8th (III-2) Gear											
84.02 *(62.65)*	5889 *(26.20)*	5.35 *(8.61)*	2600	4.15	6.384 *(24.167)*	0.530 *(0.322)*	13.16 *(2.592)*	192 *(88.6)*	64 *(17.7)*	83 *(28.3)*	28.61 *(96.63)*
50% of Pull at Maximum Power — Two Hours 8th (III-2) Gear											
57.74 *(43.06)*	3926 *(17.46)*	5.52 *(8.88)*	2644	2.86	5.190 *(19.646)*	0.627 *(0.381)*	11.13 *(2.192)*	189 *(86.9)*	61 *(16.1)*	79 *(26.1)*	28.54 *(96.36)*
50% of Pull at Reduced Engine Speed — Two Hours 12th (III-4) Gear											
57.73 *(43.05)*	3926 *(17.46)*	5.51 *(8.87)*	1762	2.78	3.900 *(14.762)*	0.471 *(0.287)*	14.80 *(2.916)*	188 *(86.7)*	63 *(17.2)*	84 *(28.9)*	28.57 *(96.46)*



Hesston 130-90DT Turbo Fiat Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

MAXIMUM POWER IN SELECTED GEARS

86.51 *(64.51)*	12687 *(56.43)*	2.56 *(4.12)*	2593	14.67	3rd (I-3) Gear	190 *(87.3)*	60 *(15.6)*	76 *(24.4)*	28.52 *(96.31)*
100.47 *(74.92)*	11803 *(52.50)*	3.19 *(5.14)*	2500	10.81	4th (I-4) Gear	189 *(87.2)*	54 *(12.2)*	59 *(15.0)*	29.16 *(98.47)*
103.10 *(76.88)*	10734 *(47.74)*	3.60 *(5.80)*	2500	9.06	5th (II-1) Gear	189 *(87.2)*	55 *(12.8)*	60 *(15.6)*	29.16 *(98.47)*
104.53 *(77.94)*	9674 *(43.03)*	4.05 *(6.52)*	2499	7.54	6th (III-1) Gear	189 *(87.2)*	56 *(13.3)*	63 *(17.2)*	29.16 *(98.47)*
105.24 *(78.48)*	8762 *(38.98)*	4.50 *(7.25)*	2499	6.65	7th (II-2) Gear	189 *(87.2)*	56 *(13.3)*	64 *(17.8)*	29.16 *(98.47)*
105.81 *(78.90)*	7852 *(34.93)*	5.05 *(8.13)*	2500	5.81	8th (III-2) Gear	190 *(87.8)*	59 *(15.0)*	70 *(21.1)*	29.14 *(98.40)*
104.90 *(78.23)*	7086 *(31.52)*	5.55 *(8.93)*	2501	5.12	9th (II-3) Gear	190 *(87.8)*	58 *(14.4)*	68 *(20.0)*	29.14 *(98.40)*
104.92 *(78.24)*	6348 *(28.24)*	6.20 *(9.97)*	2501	4.50	10th (III-3) Gear	190 *(87.8)*	57 *(13.9)*	65 *(18.3)*	29.15 *(98.44)*
103.85 *(77.44)*	5596 *(24.89)*	6.96 *(11.20)*	2501	3.94	11th (II-4) Gear	189 *(87.2)*	57 *(13.9)*	65 *(18.3)*	29.15 *(98.44)*
102.31 *(76.29)*	4947 *(22.00)*	7.76 *(12.48)*	2500	3.47	12th (III-4) Gear	189 *(87.2)*	58 *(14.4)*	66 *(18.9)*	29.15 *(98.44)*
101.73 *(75.86)*	3954 *(17.59)*	9.65 *(15.53)*	2501	2.82	13th (IV-1) Gear	190 *(87.5)*	58 *(14.4)*	67 *(19.4)*	29.14 *(98.40)*

LUGGING ABILITY IN 8th (III-2) GEAR

Crankshaft Speed rpm	2500	2254	1998	1755	1495	1246
Pull—lbs *(kN)*	7852 *(34.93)*	8361 *(37.19)*	9333 *(41.52)*	10179 *(45.28)*	10388 *(46.21)*	9672 *(43.02)*
Increase in Pull %	0	6	19	30	32	23
Power—Hp *(kW)*	105.81 *(78.90)*	101.00 *(75.31)*	98.93 *(73.77)*	93.76 *(69.92)*	81.20 *(60.55)*	63.58 *(47.41)*
Speed—Mph *(km/h)*	5.05 *(8.13)*	4.53 *(7.29)*	3.97 *(6.40)*	3.45 *(5.56)*	2.93 *(4.72)*	2.47 *(3.97)*
Slip %	5.81	6.35	7.39	8.41	8.70	7.83

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
Maximum Available Power—Two Hours	78.5	78.0
75% of Pull at Maximum Power—Ten Hours		78.5
50% of Pull at Maximum Power—Two Hours		79.5
50% of Pull at Reduced Engine Speed—Two Hours		77.0
Bystander in 16th (IV-4) gear		86.0

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power - Two Hours 8th (III-2) Gear											
105.52 *(78.68)*	7682 *(34.17)*	5.15 *(8.29)*	2500	4.43	7.226 *(27.353)*	0.478 *(0.291)*	14.60 *(2.877)*	190 *(87.8)*	61 *(15.8)*	74 *(23.3)*	29.06 *(98.11)*
MAXIMUM POWER IN SELECTED GEARS											
87.82 *(65.49)*	15559 *(69.21)*	2.12 *(3.41)*	2589	14.78	2nd (I-2) Gear			189 *(86.9)*	58 *(14.4)*	75 *(23.9)*	28.52 *(96.31)*
106.65 *(79.53)*	8676 *(38.59)*	4.61 *(7.42)*	2499	5.06	7th (II-2) Gear			189 *(87.2)*	57 *(13.9)*	64 *(17.8)*	29.15 *(98.44)*
107.15 *(79.90)*	7800 *(34.70)*	5.15 *(8.29)*	2500	4.51	8th (III-2) Gear			189 *(87.2)*	59 *(15.0)*	69 *(20.6)*	29.14 *(98.40)*

concrete surface without brake) right 241" *(6.12 m)* left 241" *(6.12 m)* **Turning space diameter** (on concrete surface with brake applied) right 419" *(10.65 m)* left 423" *(10.73 m)* (on concrete surface without brake) right 497" *(12.63 m)* left 497" *(12.63 m)* **Power take-off** 540 rpm at 2261 engine rpm and 1000 rpm at 2459 engine rpm **Unladen tractor mass** 14565 lbs *(6607 kg)*.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 140°F *(60.0°C)*. Eleven gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. During final inspection, longitudinal scratches were found on cylinders number one and three.

We, the undersigned, certify that this is a true and correct report of offical Tractor Test No. **1533**, December 10, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

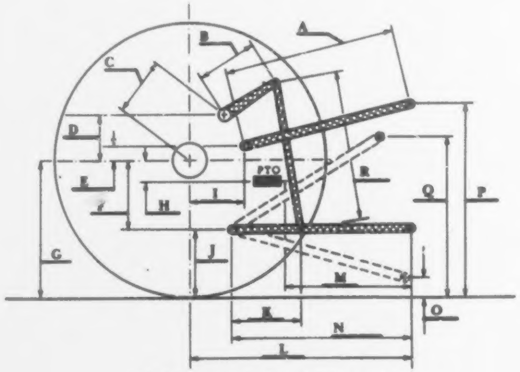
K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Four 18.4-38; 8; 14 *(95)*	Four 18.4-38; 8; 14 *(95)*
Ballast	—Liquid (each)	None	None
	—Test Equip (each)	72 lb *(33 kg)*	None
Front Tires	—No. size, ply & psi *(kPa)*	Two 14.9-28; 6; 20 *(140)*	Two 14.9-28; 6; 20 *(140)*
Ballast	—Liquid (each)	None	None
	—Test Equip (each)	43 lb *(19 kg)*	None
Height of Drawbar		21.5 in *(545 mm)*	21.5 in *(545 mm)*
Static Weight with Operator	—Rear	11050 lb *(5012 kg)*	10760 in *(4880 kg)*
	—Front	5375 lb *(2438 kg)*	5290 lb *(2400 kg)*
	—Total	16425 lb *(7450 kg)*	16050 lb *(7280 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2400	*16550*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	199	*93*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	7042	*3194*	
TIME sec	2.06		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.0	*305*	
Top of timed range	36.0	*913*	
Highest position	36.5	*927*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.8	*298*	
Top of timed range	34.5	*875*	
Highest position	35.1	*891*	

*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	mm
A	32.0	*813*
B	10.8	*275*
C	16.9	*430*
D	16.1	*409*
E	9.0	*229*
F	11.0	*279*
G	32.3	*819*
H	2.5	*64*
I	16.7	*425*
J	21.3	*540*
K	21.5	*546*
L	48.5	*1232*
M	26.2	*665*
N	40.0	*1016*
O	8.0	*203*
P	40.3	*1022*
Q	36.8	*933*
R	34.4	*873*

Hesston 140-90DT Turbo Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1534—HESSTON 160-90DT TURBO FIAT DIESEL ALSO HESSTON 160-90 TURBO FIAT DIESEL

16 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F *(°C)* Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1061 rpm)								
141.71 *(105.68)*	2200	8.376 *(31.703)*	0.412 *(0.251)*	16.92 *(3.333)*	180 *(82.1)*	70 *(20.9)*	75 *(24.1)*	29.42 *(99.33)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
143.91 *(107.32)*	2074	8.210 *(31.076)*	0.398 *(0.242)*	17.53 *(3.453)*	181 *(82.9)*	70 *(20.9)*	75 *(23.7)*	29.41 *(99.31)*
VARYING POWER AND FUEL CONSUMPTION - Two Hours								
124.36 *(92.74)*	2272	7.589 *(28.728)*	0.426 *(0.259)*	16.39 *(3.228)*	176 *(79.7)*	71 *(21.7)*	76 *(24.2)*	—
0.00 *(0.00)*	2425	2.560 *(9.690)*	—	—	175 *(79.2)*	71 *(21.7)*	75 *(23.6)*	—
64.68 *(48.23)*	2364	5.029 *(19.038)*	0.542 *(0.330)*	12.86 *(2.533)*	175 *(79.4)*	71 *(21.7)*	76 *(24.2)*	—
143.04 *(106.67)*	2200	8.420 *(31.871)*	0.410 *(0.250)*	16.99 *(3.347)*	179 *(81.7)*	71 *(21.7)*	76 *(24.4)*	—
32.71 *(24.39)*	2391	3.838 *(14.527)*	0.818 *(0.498)*	8.52 *(1.679)*	175 *(79.2)*	71 *(21.7)*	75 *(23.9)*	—
95.26 *(71.04)*	2323	6.363 *(24.086)*	0.466 *(0.283)*	14.97 *(2.949)*	177 *(80.3)*	71 *(21.7)*	76 *(24.4)*	—
Av 76.68 **Av** ***(57.18)***	**2329**	**5.633** ***(21.323)***	**0.512** ***(0.312)***	**13.61** ***(2.681)***	**176** ***(79.9)***	**71** ***(21.7)***	**75** ***(24.1)***	**29.36** ***(99.16)***

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F *(°C)* Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-2) Gear											
119.63 *(89.21)*	8433 *(37.51)*	5.32 *(8.56)*	2201	5.94	8.318 *(31.486)*	0.485 *(0.295)*	14.38 *(2.833)*	179 *(81.7)*	57 *(13.6)*	74 *(23.3)*	28.98 *(97.86)*
75% of Pull at Maximum Power - Ten Hours 8th (III-2) Gear											
97.22 *(72.50)*	6461 *(28.74)*	5.64 *(9.08)*	2291	4.26	7.138 *(27.018)*	0.512 *(0.311)*	13.62 *(2.683)*	178 *(81.3)*	62 *(16.4)*	69 *(20.7)*	28.87 *(97.50)*
50% of Pull at Maximum Power - Two Hours 8th (III-2) Gear											
67.24 *(50.14)*	4307 *(19.16)*	5.85 *(9.42)*	2342	2.94	5.679 *(21.498)*	0.589 *(0.358)*	11.84 *(2.332)*	178 *(81.1)*	58 *(14.4)*	80 *(26.7)*	28.95 *(97.74)*
50% of Pull at Reduced Engine Speed — Two Hours 12th (III-4) Gear											
67.22 *(50.12)*	4306 *(19.15)*	5.85 *(9.42)*	1562	2.77	4.603 *(17.426)*	0.478 *(0.290)*	14.60 *(2.876)*	177 *(80.6)*	58 *(14.4)*	80 *(26.7)*	28.93 *(97.69)*
MAXIMUM POWER IN SELECTED GEARS											
99.17 *(73.95)*	13848 *(61.60)*	2.69 *(4.32)*	2276	14.90	3rd (I-3) Gear			179 *(81.7)*	59 *(15.0)*	62 *(16.7)*	28.82 *(97.32)*
116.11 *(86.59)*	12961 *(57.65)*	3.36 *(5.41)*	2199	10.95	4th (I-4) Gear			178 *(81.1)*	46 *(7.8)*	48 *(8.9)*	28.97 *(97.83)*
119.61 *(89.19)*	11821 *(52.58)*	3.79 *(6.11)*	2200	9.13	5th (II-1) Gear			178 *(81.1)*	47 *(8.3)*	50 *(10.0)*	28.98 *(97.86)*
120.51 *(89.86)*	10579 *(47.06)*	4.27 *(6.87)*	2200	7.77	6th (III-1) Gear			178 *(181.1)*	49 *(9.4)*	53 *(11.7)*	28.98 *(97.86)*
121.31 *(90.46)*	9584 *(42.63)*	4.75 *(7.64)*	2199	6.77	7th (II-2) Gear			178 *(181.1)*	49 *(9.4)*	54 *(12.2)*	28.98 *(97.86)*
122.23 *(91.15)*	8614 *(38.31)*	5.32 *(8.56)*	2198	5.90	8th (III-2) Gear			179 *(81.7)*	54 *(12.2)*	66 *(18.9)*	29.00 *(97.93)*
121.39 *(90.52)*	7794 *(34.67)*	5.84 *(9.40)*	2200	5.34	9th (II-3) Gear			178 *(81.1)*	50 *(10.0)*	56 *(13.3)*	28.99 *(97.89)*
121.09 *(90.30)*	6953 *(30.93)*	6.53 *(10.51)*	2201	4.60	10th (III-3) Gear			178 *(81.1)*	51 *(10.6)*	58 *(14.4)*	28.99 *(97.89)*
120.10 *(89.56)*	6147 *(27.34)*	7.33 *(11.79)*	2198	4.03	11th (II-4) Gear			178 *(81.1)*	52 *(11.1)*	60 *(15.6)*	28.99 *(97.89)*
119.00 *(88.74)*	5460 *(24.29)*	8.17 *(13.15)*	2199	3.53	12th (III-4) Gear			178 *(81.1)*	53 *(11.7)*	62 *(16.7)*	29.00 *(97.93)*

Department of Agricultural Engineering

Dates of Test: September 25 to October 8, 1984

Manufacturer: FIAT TRATTORI S.p.A. Via Picodella Mirandola, 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** ***(15/15°C)*** 0.8375 **Fuel weight** 6.973 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 3.866 gal *(14.635 l)* **Drained from motor** 3.422 gal *(12.953 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 43.5 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 8365.25*503*755274* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.528" × 5.118" *(115 mm × 130 mm)* **Compression ratio** 15.5 to 1 **Displacement** 494 cu in *(8102 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, engine coolant heat exchanger for transmission oil **Fuel filter** one paper cartridge, one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist with duals **Serial No.** 160-90DT/1S*261183* **Tread width** rear 60" *(1524 mm)* to 129" *(3277 mm)* front 64" *(1625 mm)* to 92" *(2337 mm)* **Wheel base** 113.8" *(2890 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 37.2" *(945 mm)* Vertical distance above roadway 42.5" *(1080 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 2.1 *(3.3)* second 2.5 *(4.0)* third 3.0 *(4.9)* fourth 3.8 *(6.1)* fifth 4.2 *(6.7)* sixth 4.6 *(7.4)* seventh 5.1 *(8.2)* eighth 5.6 *(9.1)* ninth 6.1 *(9.9)* tenth 6.8 *(11.0)* eleventh 7.6 *(12.3)* twelfth 8.4 *(13.6)* thirteenth 10.4 *(16.8)* fourteenth 12.7 *(20.5)* fifteenth 15.4 *(24.8)* sixteenth 19.1 *(30.7)* reverse 1.6 *(2.6)*, 2.0 *(3.2)*, 2.4 *(3.9)*, 3.0 *(4.8)*, 3.4 *(5.5)*, 3.7 *(5.9)*, 4.0 *(6.5)*, 4.5 *(7.3)*, 4.9 *(7.9)*, 5.5 *(8.8)*, 6.1 *(9.8)*, 6.8 *(10.9)*, 8.1 *(13.1)*, 10.2 *(16.4)*, 12.3 *(19.8)*, 15.3 *(24.6)* **Clutch** double dry disc hydraulically operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 225" *(5.72 m)* left 225" *(5.72 m)* (on

LUGGING ABILITY IN 8th (III-2) GEAR

Crankshaft Speed rpm	2198	1983	1757	1545	1314	1092
Pull—lbs *(kN)*	8614 *(38.31)*	9387 *(41.76)*	9581 *(42.62)*	9729 *(43.28)*	9515 *(42.32)*	8631 *(38.39)*
Increase in Pull %	0	9	11	13	10	0
Power—Hp *(kW)*	122.23 *(91.15)*	119.25 *(88.92)*	107.61 *(80.25)*	95.87 *(71.49)*	79.95 *(59.62)*	60.72 *(45.28)*
Speed—Mph *(km/h)*	5.32 *(8.56)*	4.76 *(7.67)*	4.21 *(6.78)*	3.70 *(5.95)*	3.15 *(5.07)*	2.64 *(4.25)*
Slip %	5.90	6.61	6.77	6.92	6.77	6.14

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	79.0	78.0
75% of Pull at Maximum Power—Ten Hours		78.5
50% of Pull at Maximum Power—Two Hours		78.0
50% of Pull at Reduced Engine Speed—Two Hours		75.5
Bystander in 16th (IV-4) gear		85.5

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power - Two Hours 8th (III-2) Gear											
120.08 *(89.54)*	8284 *(36.85)*	5.44 *(8.75)*	2200	4.92	8.303 *(31.432)*	0.482 *(0.293)*	14.46 *(2.849)*	179 *(81.7)*	60 *(15.3)*	62 *(16.7)*	28.84 *(97.39)*
MAXIMUM POWER IN SELECTED GEARS											
100.22 *(74.74)*	16644 *(74.03)*	2.26 *(3.63)*	2281	14.49	2nd (I-2) Gear			179 *(81.4)*	59 *(15.0)*	62 *(16.7)*	28.83 *(97.35)*
122.41 *(91.28)*	8436 *(37.52)*	5.44 *(8.76)*	2199	4.72	8th (III-2) Gear			179 *(81.2)*	53 *(11.7)*	64 *(17.8)*	29.00 *(97.93)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., Size, ply & psi *(kPa)*	Four 20.8-38, 8, 14 *(95)*	Four 20.8-38, 8, 14 *(95)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each inner)	490 lb *(222 kg)*	None
Front Tires	—No., Size, ply & psi *(kPa)*	Two 16.9-28, 6, 18 *(125)*	Two 16.9-28, 6, 13 *(125)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	48 lb *(22 kg)*	None
Height of Drawbar		23.5 in *(595 mm)*	23.5 in *(595 mm)*
Static Weight with Operator	—Rear	12655 lb *(5740 kg)*	11675 lb *(5296 kg)*
	—Front	5715 lb *(2592 kg)*	5620 lb *(2549 kg)*
	—Total	18370 lb *(8332 kg)*	17295 lb *(7845 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2425	*16720*	
Location	remote		
Hydraulic oil temperature °F (°C)	190	*88*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	**12516	5677	
TIME sec	3.21		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	11.1	*283*	
Top of timed range	35.1	*892*	
Highest position	36.1	*918*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	12.0	*305*	
Top of timed range	34.5	*876*	
Highest position	35.6	*903*	

*Implement load capacity for transport purposes not specified by manufacturer
**Manufacturers advertised capacity was 13450 lbs. *(6100 kg)*

concrete surface without brake) right 265" *(6.72 m)* left 265" *(6.72 m)* **Turning space diameter** (on concrete surface with brake applied) right 467" *(11.87 m)* left 467" *(11.87 m)* (on concrete surface without brake) right 546" *(13.87 m)* left 546" *(13.87 m)* **Power take-off** 540 rpm at 1950 engine rpm and 1000 rpm at 2074 engine rpm **Unladen tractor mass** 15520 lb *(7040 kg)*.

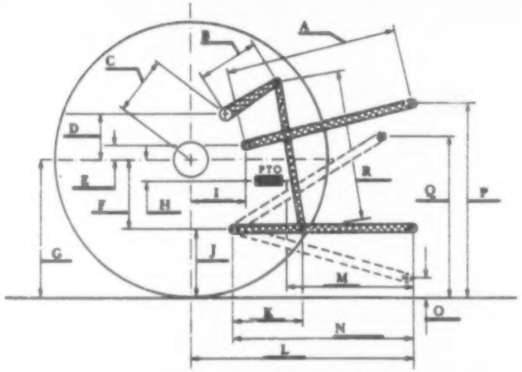
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 133°F *(56.0°C)*. Ten gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1534**, December 10, 1984.

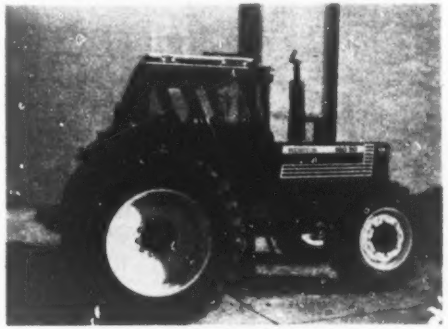
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.5	*800*
B	10.8	*275*
C	16.9	*430*
D	16.1	*409*
E	9.0	*229*
F	11.0	*280*
G	34.0	*864*
H	2.5	*64*
I	16.7	*425*
J	23.0	*584*
K	21.5	*546*
L	48.5	*1232*
M	26.2	*665*
N	40.0	*1016*
O	8.0	*203*
P	42.0	*1067*
Q	36.8	*933*
R	35.5	*902*



Hesston 160-90DT Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1535—HESSTON 180-90 DT TURBO FIAT DIESEL
ALSO HESSTON 180-90 TURBO FIAT DIESEL
16 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1061 rpm)								
162.87 *(121.45)*	2200	9.388 *(35.534)*	0.402 *(0.244)*	17.35 *(3.418)*	177 *(80.8)*	67 *(19.3)*	75 *(24.0)*	29.34 *(99.08)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
158.66 *(118.31)*	2075	8.881 *(33.614)*	0.390 *(0.237)*	17.86 *(3.520)*	178 *(80.8)*	67 *(19.3)*	75 *(24.0)*	29.31 *(98.98)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
143.17 *(106.76)*	2275	8.501 *(32.178)*	0.414 *(0.252)*	16.84 *(3.318)*	175 *(79.2)*	66 *(18.9)*	74 *(23.3)*	
0.00 *(0.00)*	2440	2.729 *(10.329)*			175 *(79.2)*	66 *(18.9)*	76 *(24.2)*	
74.53 *(55.58)*	2370	5.604 *(21.213)*	0.524 *(0.319)*	13.30 *(2.620)*	175 *(79.4)*	65 *(18.3)*	74 *(23.3)*	
164.00 *(122.30)*	2201	9.430 *(35.697)*	0.401 *(0.244)*	17.39 *(3.426)*	177 *(80.3)*	67 *(19.2)*	75 *(23.6)*	
37.76 *(28.16)*	2400	4.115 *(15.576)*	0.760 *(0.462)*	9.18 *(1.808)*	175 *(79.4)*	66 *(18.9)*	75 *(23.9)*	
109.90 *(81.95)*	2328	7.093 *(26.850)*	0.450 *(0.274)*	15.49 *(3.052)*	176 *(79.7)*	67 *(19.2)*	76 *(24.2)*	
Av 88.23 **Av *(65.79)***	**2335**	**6.245** ***(23.641)***	**0.493** ***(0.300)***	**14.13** ***(2.783)***	**175** ***(79.5)***	**66** ***(18.9)***	**75** ***(23.8)***	**29.28** ***(98.86)***

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 8th (III-2) Gear											
137.22 *(102.32)*	9916 *(44.11)*	5.19 *(8.35)*	2200	7.34	9.261 *(35.057)*	0.470 *(0.286)*	14.82 *(2.919)*	177 *(80.8)*	44 *(6.4)*	56 *(13.3)*	29.28 *(98.87)*
75% of Pull at Maximum Power — Ten Hours 8th (III-2) Gear											
112.14 *(83.62)*	7568 *(33.66)*	5.56 *(8.94)*	2296	4.98	7.869 *(29.789)*	0.489 *(0.298)*	14.25 *(2.807)*	177 *(80.8)*	48 *(8.7)*	62 *(16.4)*	29.09 *(98.24)*
50% of Pull at Maximum Power — Two Hours 8th (III-2) Gear											
78.20 *(58.31)*	5046 *(22.45)*	5.81 *(9.35)*	2361	3.39	6.363 *(24.087)*	0.567 *(0.345)*	12.29 *(2.421)*	177 *(80.6)*	51 *(10.6)*	61 *(16.1)*	28.95 *(97.74)*
50% of Pull at Reduced Engine Speed — Two Hours 12th (III-4) Gear											
78.21 *(58.32)*	5046 *(22.44)*	5.81 *(9.35)*	1575	3.50	5.086 *(19.253)*	0.453 *(0.276)*	15.38 *(3.029)*	176 *(80.0)*	56 *(13.3)*	69 *(20.6)*	28.93 *(97.69)*
MAXIMUM POWER IN SELECTED GEARS											
127.48 *(95.06)*	14713 *(65.44)*	3.25 *(5.23)*	2245	14.80	4th (I-4) Gear			178 *(81.1)*	47 *(8.3)*	55 *(12.8)*	28.94 *(97.73)*
133.35 *(99.44)*	13850 *(61.61)*	3.61 *(5.81)*	2200	12.67	5th (II-1) Gear			177 *(80.3)*	36 *(2.2)*	42 *(5.6)*	29.35 *(99.11)*
137.07 *(102.22)*	12453 *(55.39)*	4.13 *(6.64)*	2199	10.01	6th (III-1) Gear			177 *(80.3)*	38 *(3.3)*	45 *(7.2)*	29.35 *(99.11)*
138.39 *(103.19)*	11241 *(50.00)*	4.62 *(7.43)*	2200	8.62	7th (II-2) Gear			177 *(80.3)*	38 *(3.3)*	46 *(7.8)*	29.36 *(99.14)*
139.90 *(104.33)*	10091 *(44.88)*	5.20 *(8.37)*	2201	7.26	8th (III-2) Gear			177 *(80.6)*	42 *(5.6)*	53 *(11.7)*	29.32 *(99.01)*
140.09 *(104.46)*	9187 *(40.86)*	5.72 *(9.20)*	2202	6.49	9th (II-3) Gear			176 *(80.0)*	39 *(3.9)*	47 *(8.3)*	29.36 *(99.14)*
140.45 *(104.73)*	8225 *(36.58)*	6.40 *(10.31)*	2201	5.54	10th (III-3) Gear			177 *(80.6)*	39 *(3.9)*	48 *(8.9)*	29.35 *(99.11)*
139.17 [illegible]	7245 *(32.23)*	7.20 *(11.59)*	2201	4.90	11th (II-4) Gear			177 *(80.6)*	40 *(4.4)*	49 *(9.4)*	29.34 *(99.08)*
138.58 *(103.34)*	6467 *(28.77)*	8.04 *(12.93)*	2200	4.25	12th (III-4) Gear			177 *(80.6)*	40 *(4.4)*	50 *(10.0)*	29.33 *(99.04)*

Department of Agricultural Engineering

Dates of Test: September 25 to October 4, 1984

Manufacturer: FIAT TRATTORI, S.p.A. Via Picodella Mirandola, 72-41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8371 **Fuel weight** 6.970 lbs/gal *(0.835 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 4.006 gal *(15.163 l)* **Drained from motor** 3.310 gal *(12.530 l)* **Transmission and final drive lubricant** API 303 hydraulic fluid **Total time engine was operated** 41.0 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 8365.25*502*755336* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.528" × 5.118" *(115 mm × 130 mm)* **Compression ratio** 15.5 to 1 **Displacement** 494 cu in *(8102 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, engine coolant heat exchanger for transmission oil **Fuel filter** one paper cartridge, one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat

CHASSIS: Type front wheel assist with duals **Serial No.** 180-90DT/15*263130* **Tread width** rear 60" *(1524 mm)* to 129" *(3277 mm)* front 64" *(1625 mm)* to 92" *(2337 mm)* **Wheel base** 113.8" *(2890 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 37.2" *(946 mm)* Vertical distance above roadway 42.5" *(1080 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 2.1 *(3.3)* second 2.5 *(4.0)* third 3.0 *(4.9)* fourth 3.8 *(6.1)* fifth 4.2 *(6.7)* sixth 4.6 *(7.4)* seventh 5.1 *(8.2)* eighth 5.6 *(9.1)* ninth 6.1 *(9.9)* tenth 6.8 *(11.0)* eleventh 7.6 *(12.3)* twelfth 8.4 *(13.6)* thirteenth 10.4 *(16.8)* fourteenth 12.7 *(20.5)* fifteenth 15.4 *(24.8)* sixteenth 19.1 *(30.7)* reverse 1.6 *(2.6)*, 2.0 *(3.2)*, 2.4 *(3.9)*, 3.0 *(4.8)*, 3.4 *(5.5)*, 3.7 *(5.9)*, 4.0 *(6.5)*, 4.5 *(7.3)*, 4.9 *(7.9)*, 5.5 *(8.8)*, 5.1 *(9.8)*, 6.8 *(10.9)*, 8.1 *(13.1)*, 10.2 *(16.4)*, 12.3 *(19.8)*, 15.3 *(24.6)* **Clutch** double dry disc hydraulically operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 225" *(5.72 m)* left 225" *(5.72 m)* (on concrete surface without brake) right 265" *(6.72 m)* left 265" *(6.72 m)* **Turning space diameter** (on concrete surface with brake applied) right 467" *(11.87 m)* left 467" *(11.87 m)* (on concrete surface without brake) right 546" *(13.87 m)* left 546" *(13.87 m)* **Power take-off** 1000 rpm at 2075 engine rpm **Unladen tractor mass** 15520 lb *(7040 kg)*.

REPAIRS AND ADJUSTMENTS: During the hydraulic lift test, an "O" ring in the hydraulic pump failed. The hydraulic pump and filter were replaced and test continued.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 134° *(56.6°C)*. Nine gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1535**, December 10, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

LUGGING ABILITY IN 8th (III-2) GEAR

Crankshaft Speed rpm	2201	1981	1760	1540	1313	1084
Pull—lbs *(kN)*	10091 *(44.88)*	10639 *(47.32)*	11058 *(49.19)*	12340 *(54.89)*	12232 *(54.41)*	9748 *(43.36)*
Increase in Pull %	0	5	10	22	21	−3
Power—Hp *(kW)*	139.90 *(104.33)*	131.87 *(98.34)*	121.19 *(90.37)*	116.58 *(86.93)*	98.57 *(73.51)*	66.66 *(49.70)*
Speed—Mph *(km/h)*	5.20 *(8.37)*	4.65 *(7.48)*	4.11 *(6.61)*	3.54 *(5.70)*	3.02 *(4.86)*	2.56 *(4.13)*
Slip %	7.26	7.87	8.17	9.30	9.80	7.26

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
Maximum Available Power—Two Hours	78.5	78.5
75% of Pull at Maximum Power—Ten Hours		78.5
50% of Pull at Maximum Power—Two Hours		78.5
50% of Pull at Reduced Engine Speed—Two Hours		75.5
Bystander in 16th (IV-4) gear		86.0

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

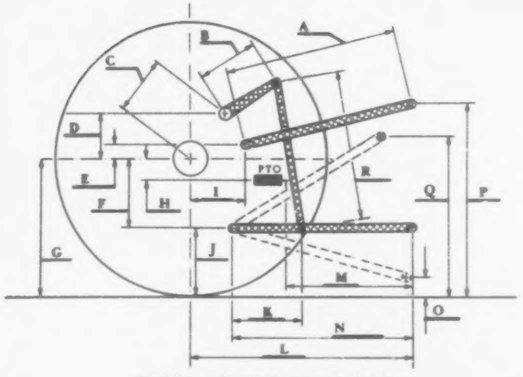
Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 8th (III-2) Gear											
137.82 *(102.78)*	9697 *(43.13)*	5.33 *(8.58)*	2200	5.90	9.232 *(34.949)*	0.467 *(0.284)*	14.93 *(2.941)*	178 *(80.8)*	45 *(7.2)*	59 *(14.7)*	29.23 *(98.71)*
MAXIMUM POWER IN SELECTED GEARS											
124.54 *(92.87)*	17507 *(77.87)*	2.67 *(4.29)*	2258	14.86	3rd (I-3) Gear			178 *(80.8)*	45 *(7.2)*	52 *(11.1)*	28.94 *(97.73)*
140.48 *(104.76)*	9876 *(43.93)*	5.33 *(8.58)*	2200	5.98	8th (III-2) Gear -			177 *(80.6)*	41 *(5.0)*	52 *(11.1)*	29.33 *(99.04)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 20.8-38; 8; 16 *(110)*	Four 20.8-38; 8; 16 *(110)*
Ballast	—Liquid (each inner)	1150 lb *(522 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No. size, ply & psi *(kPa)*	Two 16.9-28; 6; 18 *(125)*	Two 16.9-28; 6; 18 *(125)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	65 lb *(29 kg)*	None
Height of Drawbar		22.5 in *(570 mm)*	22.5 in *(570 mm)*
Static Weight with Operator	—Rear	13975 lb *(6339 kg)*	11675 lb *(5296 kg)*
	—Front	5750 lb *(2608 kg)*	5620 lb *(2549 kg)*
	—Total	19725 lb *(8947 kg)*	17295 lb *(7845 kg)*

THREE POINT HITCH PERFORMANCE

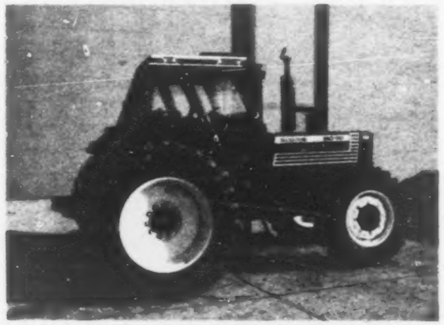
	Maximum Lift Capacity		Lift Capacity for Transport
Observed Maximum Pressure psi *(kPa)*	2400	*16550*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	190	*88*	
Location	pump inlet		
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	**12234	*5549*	
TIME sec	3.34		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	10.1	*257*	
Top of timed range	34.1	*867*	
Highest position	36.0	*914*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	10.8	*273*	
Top of timed range	33.3	*846*	
Highest position	35.4	*900*	

*Implement load capacity for transport purposes not specified by manufacturer
**Manufacturers advertised capacity was 13450 lb *(6100 kg)*



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.4	*797*
B	10.8	*275*
C	16.9	*430*
D	16.1	*409*
E	9.0	*229*
F	11.0	*280*
G	33.0	*839*
H	2.5	*64*
I	16.7	*425*
J	22.0	*559*
K	21.5	*546*
L	48.5	*1232*
M	26.2	*665*
N	40.0	*1016*
O	8.0	*203*
P	41.0	*1041*
Q	36.6	*930*
R	34.9	*886*



Hesston 180-90DT Diesel

NEBRASKA TRACTOR TEST 1581
HESSTON 180-90 TURBO POWERSHIFT FIAT DiESEL
16 SPEED

Department of Agricultural Engineering

Dates of Test: October 2 to 16, 1985

Manufacturer: FIAT TRATTORI S.p.A. Via Picodella Mirandola 72- 41100, Modena, Italy

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F *(15/15°C)*** 0.8420 **Fuel weight** 7.011 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W40 **API service classification** SF-CD **To motor** 4.038 gal *(15.285 l)* **Drained from motor** 3.492 gal *(13.219 l)* **Transmission lubricant** Type A automatic transmission fluid **Hydraulic and front axle lubricant** Hesston M&PS 705106016 fluid **Total time engine was operated** 42.5 hours.

ENGINE: Make Fiat/IVECO Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 8365.25 504*757733* **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.528" × 5.118" *(115 mm × 130 mm)* **Compression ratio** 15.5 to 1 **Displacement** 494 cu in *(8102 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and centrifugal precleaner **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, engine coolant heat exchanger for transmission oil **Fuel filter** one paper cartridge, one paper element and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist with duals **Serial No.** 180-90PSDT/1*263870* **Tread width** rear 64" *(1625 mm)* to 123" *(3125 mm)* front 64" *(1625 mm)* to 92" *(2337 mm)* **Wheel base** 113.8" *(2890 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 37.2" *(946 mm)* Vertical distance above roadway 42.5" *(1080 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Advertised speeds mph *(km/h)*** first 2.0 *(3.3)* second 2.5 *(4.0)* third 3.0 *(4.9)* fourth 3.8 *(6.1)* fifth 4.2 *(6.7)* sixth 4.6 *(7.4)* seventh 5.1 *(8.2)* eighth 5.6 *(9.1)* ninth 6.1 *(9.9)* tenth 6.8 *(11.0)* eleventh 7.6 *(12.3)* twelfth 8.4 *(13.6)* thirteenth 10.4 *(16.8)* fourteenth 12.7 *(20.5)* fifteenth 15.4 *(24.8)* sixteenth 19.1 *(30.7)* reverse 1.6 *(2.6)*, 2.0 *(3.2)*, 2.4 *(3.9)*, 3.0 *(4.8)*, 3.3 *(5.4)*, 3.7 *(5.9)*, 4.0 *(6.5)*, 4.5 *(7.3)*, 4.9 *(7.9)*, 5.5 *(8.8)*, 6.1 *(9.8)*, 6.8 *(10.9)*, 8.1 *(13.1)*, 10.2 *(16.4)*, 12.3 *(19.8)*, 15.3 *(24.6)* **Clutch** dual dry disc hydraulically power actuated and operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hy-

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 1061 rpm)								
162.15 *(120.91)*	2200	10.060 *(38.081)*	0.435 *(0.265)*	16.12 *(3.175)*	178 *(81.3)*	66 *(18.8)*	74 *(23.6)*	28.84 *(97.40)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
161.07 *(120.11)*	2075	9.603 *(36.353)*	0.418 *(0.254)*	16.77 *(3.304)*	179 *(81.8)*	70 *(20.8)*	75 *(24.1)*	28.86 *(97.46)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
141.17 *(105.27)*	2253	8.917 *(33.756)*	0.443 *(0.269)*	15.83 *(3.119)*	177 *(80.3)*	71 *(21.4)*	76 *(24.4)*	— —
0.00 *(0.00)*	2409	3.214 *(12.164)*	— —	— —	173 *(78.3)*	69 *(20.6)*	74 *(23.1)*	— —
73.55 *(54.85)*	2349	5.944 *(22.499)*	0.567 *(0.345)*	12.38 *(2.438)*	175 *(79.4)*	70 *(21.1)*	75 *(23.9)*	— —
164.73 *(122.84)*	2201	10.043 *(38.016)*	0.427 *(0.260)*	16.40 *(3.231)*	179 *(81.4)*	71 *(21.7)*	75 *(23.9)*	— —
37.26 *(27.78)*	2382	4.626 *(17.510)*	0.870 *(0.529)*	8.06 *(1.587)*	173 *(78.3)*	68 *(19.7)*	72 *(22.2)*	— —
108.39 *(80.82)*	2307	7.420 *(28.087)*	0.480 *(0.292)*	14.61 *(2.878)*	176 *(80.0)*	69 *(20.3)*	73 *(22.5)*	— —
Av 87.52 ***Av (65.26)***	**2317**	**6.694** ***(25.339)***	**0.536** ***(0.326)***	**13.07** ***(2.576)***	**175** ***(79.6)***	**69** ***(20.8)***	**74** ***(23.3)***	**28.90** ***(97.60)***

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-2) Gear											
138.56 *(103.33)*	9608 *(42.74)*	5.41 *(8.70)*	2200	2.56	9.877 *(37.390)*	0.500 *(0.304)*	14.03 *(2.763)*	181 *(82.8)*	54 *(11.9)*	68 *(20.0)*	28.95 *(97.76)*
75% of Pull at Maximum Power — Ten Hours 8th (III-2) Gear											
111.65 *(83.25)*	7425 *(33.03)*	5.64 *(9.07)*	2261	1.99	8.395 *(31.780)*	0.527 *(0.321)*	13.30 *(2.620)*	180 *(82.0)*	49 *(9.2)*	54 *(12.3)*	28.97 *(97.81)*
50% of Pull at Maximum Power — Two Hours 8th (III-2) Gear											
76.64 *(57.15)*	4950 *(22.02)*	5.81 *(9.34)*	2335	1.42	6.932 *(26.240)*	0.634 *(0.386)*	11.06 *(2.178)*	179 *(81.7)*	47 *(8.1)*	49 *(9.2)*	28.93 *(97.69)*
50% of Pull at Reduced Engine Speed — Two Hours 12th (III-4) Gear											
76.58 *(57.10)*	4950 *(22.02)*	5.80 *(9.34)*	1585	1.33	5.491 *(20.787)*	0.503 *(0.306)*	13.95 *(2.747)*	178 *(80.8)*	49 *(9.2)*	50 *(9.7)*	28.85 *(97.41)*

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

MAXIMUM POWER IN SELECTED GEARS

119.02 *(88.76)*	19734 *(87.78)*	2.26 *(3.64)*	2251	10.46	2nd (I-2) Gear	179 *(81.7)*	43 *(6.1)*	45 *(7.2)*	29.07 *(98.17)*
137.01 *(102.17)*	18387 *(81.79)*	2.79 *(4.50)*	2201	6.72	3rd (I-3) Gear	180 *(82.2)*	45 *(7.2)*	48 *(8.9)*	29.08 *(98.20)*
140.68 *(104.91)*	15147 *(67.38)*	3.48 *(5.61)*	2198	4.18	4th (I-4) Gear	180 *(81.9)*	41 *(5.0)*	45 *(7.2)*	28.93 *(97.69)*
142.47 *(106.24)*	13441 *(59.79)*	3.97 *(6.40)*	2201	3.59	5th (II-1) Gear	180 *(82.2)*	43 *(6.1)*	48 *(8.9)*	28.93 *(97.69)*
143.02 *(106.65)*	12118 *(53.90)*	4.43 *(7.12)*	2200	3.25	6th (III-1) Gear	180 *(82.2)*	44 *(6.7)*	50 *(10.0)*	28.93 *(97.69)*
142.85 *(106.52)*	11022 *(49.03)*	4.86 *(7.82)*	2200	2.82	7th (II-2) Gear	180 *(82.2)*	44 *(6.7)*	51 *(10.6)*	28.93 *(97.69)*
141.70 *(105.67)*	9834 *(43.74)*	5.40 *(8.70)*	2201	2.65	8th (III-2) Gear	180 *(82.2)*	46 *(7.8)*	50 *(10.0)*	29.08 *(98.20)*
139.09 *(103.72)*	8806 *(39.17)*	5.92 *(9.53)*	2200	2.39	9th (II-3) Gear	181 *(82.5)*	48 *(8.9)*	58 *(14.4)*	28.92 *(97.66)*
138.17 *(103.04)*	7865 *(34.99)*	6.59 *(10.60)*	2200	1.95	10th (III-3) Gear	180 *(82.2)*	47 *(8.3)*	56 *(13.3)*	28.92 *(97.66)*
137.15 *(102.27)*	7118 *(31.66)*	7.23 *(11.63)*	2201	1.77	11th (II-4) Gear	180 *(82.2)*	46 *(7.8)*	55 *(12.8)*	28.93 *(97.69)*
135.24 *(100.85)*	6316 *(28.09)*	8.03 *(12.92)*	2200	1.69	12th (III-4) Gear	180 *(82.2)*	45 *(7.2)*	53 *(11.7)*	28.93 *(97.69)*

LUGGING ABILITY IN 8th (III-2) GEAR

Crankshaft Speed rpm	2201	1983	1752	1538	1313	1091
Pull—lbs *(kN)*	9834 *(43.74)*	10559 *(46.97)*	10964 *(48.77)*	11436 *(50.87)*	11742 *(52.23)*	10741 *(47.78)*
Increase in Pull %	0	7	11	16	19	9
Power—Hp *(kW)*	141.70 *(105.67)*	136.95 *(102.12)*	125.50 *(93.59)*	114.69 *(85.52)*	100.40 *(74.87)*	76.57 *(57.10)*
Speed—Mph *(km/h)*	5.40 *(8.70)*	4.86 *(7.83)*	4.29 *(6.91)*	3.76 *(6.05)*	3.21 *(5.16)*	2.67 *(4.30)*
Slip %	2.65	2.74	2.91	3.08	3.08	2.74

	Front Wheel Drive	
TRACTOR SOUND LEVEL WITH CAB	**Disengaged dB(A)**	**Engaged dB(A)**
Maximum Available Power—Two Hours	80.5	81.0
75% of Pull at Maximum Power—Ten Hours		81.5
50% of Pull at Maximum Power—Two Hours		81.0
50% of Pull at Reduced Engine Speed—Two Hours		79.0
Bystander in 16th (IV-4) gear	89.0	

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cool-ing med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (III-2) Gear											
137.63 *(102.63)*	9687 *(43.09)*	5.33 *(8.57)*	2200	3.54	9.863 *(37.336)*	0.502 *(0.306)*	13.95 *(2.749)*	181 *(82.5)*	55 *(12.8)*	73 *(22.8)*	28.94 *(97.71)*

MAXIMUM POWER IN SELECTED GEARS

124.60 *(92.92)*	14920 *(66.37)*	3.13 *(5.04)*	2221	14.34	4th (I-4) Gear	179 *(81.7)*	41 *(5.0)*	42 *(5.6)*	29.06 *(98.13)*
141.63 *(105.61)*	9958 *(44.29)*	5.33 *(8.58)*	2200	3.50	8th (III-2) Gear	180 *(82.2)*	48 *(8.9)*	52 *(11.1)*	29.09 *(98.23)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Four 20.8R38; 8; 16 *(110)*	Four 20.8R38; 8; 16 *(110)*
Ballast	—Liquid (each)	None	None
	—Test equip (each)	43 lb *(20 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 16.9R28; 10; 16 *(110)*	Two 16.9R28; 10; 16 *(110)*
Ballast	—Liquid (each)	637 lb *(289 kg)*	None
	—Cast Iron (each)	150 lb *(68 kg)*	None
Height of Drawbar		18.5 in *(470 mm)*	18.5 in *(470 mm)*
Static Weight with Operator	—Rear	12210 lb *(5539 kg)*	12040 lb *(5461 kg)*
	—Front	7360 lb *(3338 kg)*	5785 lb *(2624 kg)*
	—Total	19570 lb *(8877 kg)*	17825 lb *(8085 kg)*

drostatic **Turning radius** (on concrete surface with brake applied) right 196" *(4.98 m)* left 202" *(5.13 m)*(on concrete surface without brake) right 265" *(6.72 m)* left 270" *(6.86 m)* **Turning space diameter** (on concrete surface with brake applied) right 412" *(10.46 m)* left 424" *(10.77 m)*(on concrete surface without brake) right 550" *(13.97 m)* left 560" *(14.22 m)* **Power take-off** 1000 rpm at 2075 engine rpm **Unladen tractor mass** 15915 lb *(7219 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 143°F *(61.4°C)*. Eleven gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. The pull in 2nd (I-2) gear was limited to avoid tractor bouncing.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1581**, December 3, 1985.

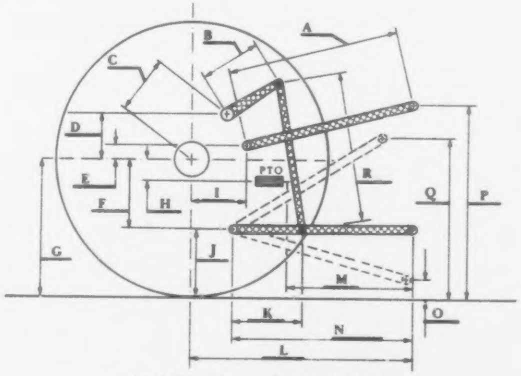
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

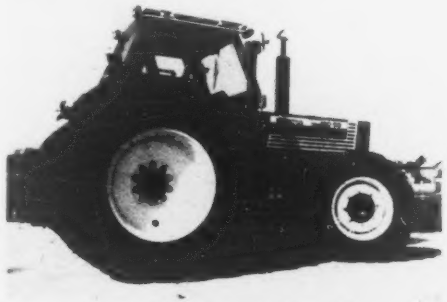
Observed Maximum Pressure psi *(kPa)*	2500	*(17240)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	188	*(87)*	
Location	hydraulic filter		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	12092	*(5485)*	
TIME sec	3.48		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	13.5	*(343)*	
Top of timed range	37.5	*(953)*	
Highest position	38.2	*(970)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	14.6	*(371)*	
Top of timed range	38.0	*(965)*	
Highest position	38.7	*(983)*	

*Implement load capacity for transport purposes not specified by manufacturer



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.0	*787*
B	10.8	*275*
C	16.9	*430*
D	16.1	*409*
E	9.0	*229*
F	11.0	*280*
G	33.8	*858*
H	2.5	*64*
I	16.7	*425*
J	22.8	*578*
K	21.5	*546*
L	48.5	*1232*
M	26.2	*665*
N	40.0	*1016*
O	8.0	*203*
P	41.8	*1060*
Q	36.9	*937*
R	35.4	*899*



Hesston 180-90 Powershift Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1551—INTERNATIONAL 3088 DIESEL 16 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp hr *(kg/kW h)*	Hp hr/gal *(kW h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1159 rpm)								
81.35 *(60.66)*	2400	5.465 *(20.685)*	0.469 *(0.285)*	14.88 *(2.933)*	186 *(85.6)*	59 *(15.1)*	75 *(24.1)*	28.97 *(97.83)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
80.28 *(59.87)*	2072	5.009 *(18.960)*	0.435 *(0.265)*	16.03 *(3.158)*	187 *(85.8)*	59 *(15.0)*	75 *(23.9)*	28.95 *(97.74)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
72.31 *(53.92)*	2511	5.141 *(19.461)*	0.496 *(0.302)*	14.06 *(2.771)*	184 *(84.4)*	59 *(14.7)*	75 *(23.9)*	—
0.00 *(0.00)*	2637	2.098 *(7.941)*	—	—	182 *(83.1)*	58 *(14.2)*	73 *(22.8)*	—
36.83 *(27.46)*	2558	3.495 *(13.229)*	0.662 *(0.403)*	10.54 *(2.076)*	183 *(83.6)*	59 *(14.7)*	74 *(23.3)*	—
81.83 *(61.02)*	2400	5.472 *(20.714)*	0.467 *(0.284)*	14.95 *(2.946)*	186 *(85.6)*	60 *(15.6)*	76 *(24.4)*	—
18.88 *(14.08)*	2620	2.816 *(10.658)*	1.041 *(0.633)*	6.71 *(1.321)*	182 *(83.3)*	59 *(15.0)*	75 *(23.9)*	—
55.08 *(41.08)*	2549	4.303 *(16.288)*	0.545 *(0.332)*	12.80 *(2.522)*	185 *(84.7)*	60 *(15.6)*	76 *(24.2)*	—
Av 44.15 **Av *(32.93)***	**2546**	**3.887** ***(14.715)***	**0.614** ***(0.374)***	**11.36** ***(2.238)***	**183** ***(84.1)***	**59** ***(15.0)***	**75** ***(23.8)***	**28.89** ***(97.57)***

DRAWBAR PERFORMANCE

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp hr *(kg/kW h)*	Hp hr/gal *(kW h/l)*	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (H1) Gear											
70.31 *(52.43)*	5100 *(22.68)*	5.17 *(8.32)*	2401	4.63	5.474 *(20.720)*	0.543 *(0.331)*	12.84 *(2.530)*	185 *(85.0)*	46 *(7.5)*	57 *(13.6)*	29.07 *(98.17)*
75% of Pull at Maximum Power — Ten Hours 8th (H1) Gear											
55.56 *(41.43)*	3841 *(17.09)*	5.42 *(8.73)*	2489	3.50	4.794 *(18.149)*	0.602 *(0.366)*	11.59 *(2.283)*	183 *(84.0)*	30 *(−1.3)*	32 *(−0.2)*	29.02 *(98.00)*
50% of Pull at Maximum Power — Two Hours 8th (H1) Gear											
38.46 *(28.68)*	2561 *(11.39)*	5.63 *(9.06)*	2554	2.34	3.940 *(14.916)*	0.715 *(0.435)*	9.76 *(1.923)*	183 *(83.9)*	52 *(10.8)*	59 *(15.0)*	28.39 *(95.85)*
50% of Pull at Reduced Engine Speed — Two Hours 12th (H4) Gear											
38.46 *(28.68)*	2560 *(11.39)*	5.63 *(9.07)*	1654	2.31	3.045 *(11.526)*	0.553 *(0.336)*	12.63 *(2.488)*	184 *(84.4)*	48 *(8.9)*	56 *(13.1)*	28.40 *(95.89)*
MAXIMUM POWER IN SELECTED GEARS											
62.88 *(46.89)*	10995 *(48.91)*	2.14 *(3.45)*	2491	14.70	4th (L4) Gear			183 *(83.9)*	34 *(1.1)*	38 *(3.3)*	29.14 *(98.40)*
69.16 *(51.57)*	7827 *(34.82)*	3.31 *(5.33)*	2401	7.39	5th (L5) Gear			184 *(84.4)*	39 *(3.9)*	45 *(7.2)*	29.14 *(98.40)*
69.38 *(51.74)*	6588 *(29.30)*	3.95 *(6.36)*	2399	6.15	6th (L6) Gear			185 *(84.7)*	42 *(5.6)*	49 *(9.4)*	29.13 *(98.37)*
69.60 *(51.90)*	5767 *(25.65)*	4.53 *(7.28)*	2400	5.24	7th (L7) Gear			185 *(84.7)*	42 *(5.6)*	49 *(9.4)*	29.13 *(98.37)*
71.20 *(53.09)*	5175 *(23.02)*	5.16 *(8.30)*	2397	4.59	8th (H1) Gear			185 *(84.7)*	36 *(2.2)*	40 *(4.4)*	29.14 *(98.40)*
70.19 *(52.34)*	4909 *(21.83)*	5.36 *(8.63)*	2399	4.45	9th (L8) Gear			185 *(85.0)*	42 *(5.6)*	50 *(10.0)*	29.12 *(98.33)*
70.64 *(52.68)*	4328 *(19.25)*	6.12 *(9.85)*	2400	3.87	10th (H2) Gear			185 *(85.0)*	42 *(5.6)*	50 *(10.0)*	29.12 *(98.33)*
70.50 *(52.57)*	3799 *(16.90)*	6.96 *(11.20)*	2399	3.35	11th (H3) Gear			185 *(85.0)*	43 *(6.1)*	51 *(10.6)*	29.11 *(98.30)*
68.76 *(51.28)*	3133 *(13.94)*	8.23 *(13.25)*	2399	2.83	12th (H4) Gear			185 *(85.0)*	44 *(6.7)*	52 *(11.1)*	29.11 *(98.30)*

Department of Agricultural Engineering

Dates of Test: November 8 to 13, 1984

Manufacturer: INTERNATIONAL HARVESTER COMPANY, 401 North Michigan Avenue, Chicago, Illinois 60611

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity (converted to 60/60°F** *(15/15°C)* 0.8382 **Fuel weight** 6.979 lbs/gal *(0.836 kg/l)* **Oil SAE 30 API service classification** CD/SF **To motor** 2.502 gal *(9.470 l)* **Drained from motor** 2.273 gal *(8.603 l)* **Transmission and final drive lubricant** I.H. Hy-Tran fluid **Total time engine was operated** 35.0 hours.

ENGINE: Make International Diesel **Type** six cylinder vertical **Serial No.** 358DT2D120827* **Crankshaft** lengthwise **Rated rpm** 2400 **Bore and stroke** 3.875" × 5.062" *(98.4 mm × 128.6 mm)* **Compression ratio** 16.4 to 1 **Displacement** 358 cu in *(5867 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard with duals **Serial No.** 2480003U001368* **Tread width** rear 60" *(1524 mm)* to 127.5" *(3238 mm)* front 60" *(1524 mm)* to 84" *(2134 mm)* **Wheel base** 104.8" *(2662 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 28.5" *(724 mm)* Vertical distance above roadway 38.1" *(968 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Advertised speeds mph *(km/h)*** first 1.5 *(2.4)* second 1.8 *(2.9)* third 2.0 *(3.2)* fourth 2.4 *(3.8)* fifth 3.5 *(5.6)* sixth 4.1 *(6.6)* seventh 4.7 *(7.5)* eighth 5.3 *(8.5)* ninth 5.5 *(8.8)* tenth 6.2 *(10.0)* eleventh 7.0 *(11.3)* twelfth 8.3 *(13.3)* thirteenth 12.2 *(19.6)* fourteenth 14.3 *(23.1)* fifteenth 16.3 *(26.2)* sixteenth 19.1 *(30.8)* reverse 2.6 *(4.2)*, 3.1 *(4.9)*, 3.5 *(5.6)*, 4.1 *(6.5)*, 6.0 *(9.7)*, 7.0 *(11.3)*, 8.0 *(12.9)*, 9.4 *(15.1)* **Clutch** single dry disc hydraulically power actuated and operated by foot pedal **Brakes** wet multiple disc hydraulically power actuated and operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 142.8" *(3.63 m)* left 142.8" *(3.63 m)* (on concrete surface without brake) right 174.6" *(4.43 m)* left 174.6" *(4.43 m)* **Turning space diameter** (on concrete surface with brake applied) right 301.4" *(7.66 m)* left 301.4" *(7.56 m)* (on concrete surface without brake) right 365.2" *(9.28 m)* left 365.2" *(9.28 m)* **Power take-off** 540 rpm at 2106 engine rpm and 1000 rpm at 2072 engine rpm **Unladen tractor mass** 10820 lb *(4908 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 104°F *(40.0°C)*. Nine gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1551**, December 10, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

LUGGING ABILITY IN 8th (H1) GEAR

Crankshaft Speed rpm	2397	2163	1923	1681	1444	1201	964
Pull—lbs *(kN)*	5175 *(23.02)*	5798 *(25.79)*	6298 *(28.01)*	6550 *(29.14)*	6952 *(30.92)*	6976 *(31.03)*	6678 *(29.71)*
Increase in Pull %	0	12	22	27	34	35	29
Power—Hp *(kW)*	71.20 *(53.09)*	71.56 *(53.36)*	68.69 *(51.22)*	62.27 *(46.43)*	56.52 *(42.15)*	47.12 *(35.14)*	36.32 *(27.08)*
Speed—Mph *(km/h)*	5.16 *(8.30)*	4.63 *(7.45)*	4.09 *(6.58)*	3.56 *(5.74)*	3.05 *(4.91)*	2.53 *(4.08)*	2.04 *(3.28)*
Slip %	4.59	5.09	5.66	6.08	6.50	6.50	6.50

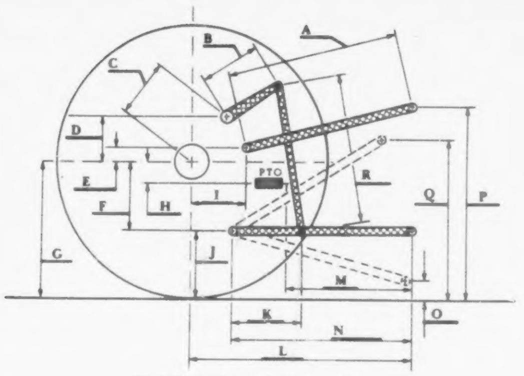
TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	79.0
75% of Pull at Maximum Power—Ten Hours	80.0
50% of Pull at Maximum Power—Two Hours	78.0
50% of Pull at Reduced Engine Speed—Two Hours	76.5
Bystander in 15th (H7) gear	86.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 18.4-34, 6, 12 *(85)*	Four 18.4-34, 6, 12 *(85)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each inner)	235 lb *(107 kg)*	None
Front Tires	—No. size, ply & psi *(kPa)*	Two 9.5L-15, 6, 36 *(250)*	Two 9.5L-15, 6, 36 *(250)*
Ballast	—Liquid (each)	None	None
	—Test Equip (each)	45 lb *(20 kg)*	None
Height of Drawbar		19.5 in *(495 mm)*	19.5 in *(495 mm)*
Static Weight with Operator	—Rear	9210 lb *(4178 kg)*	8740 lb *(3964 kg)*
	—Front	3290 lb *(1492 kg)*	3200 lb *(1452 kg)*
	—Total	12500 lb *(5670 kg)*	11940 lb *(5416 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2325	*16030*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	155	*68*	
Location	sump		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	6705	*3041*	
TIME sec	5.00		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	11.9	*302*	
Top of timed range	35.9	*911*	
Highest position	36.0	*914*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.3	*287*	
Top of timed range	35.6	*903*	
Highest position	35.8	*908*	

*Implement load capacity for transport purposes not specified by manufacturer



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	28.0	*711*
B	15.0	*381*
C	18.0	*458*
D	16.4	*416*
E	9.2	*233*
F	9.7	*245*
G	29.9	*759*
H	0.7	*18*
I	16.0	*406*
J	20.2	*514*
K	22.0	*559*
L	44.3	*1124*
*M	22.0	*559*
N	33.6	*852*
O	6.5	*165*
P	39.3	*997*
Q	34.0	*864*
R	29.8	*756*

*To 1000 RPM shaft

International 3088 Diesel

NEBRASKA TRACTOR TEST 1585—KUBOTA L2250 4WD DIESEL ALSO KUBOTA L2250 DIESEL

8 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed — 577 rpm)									
	21.15 *(15.77)*	2599	1.270 *(4.806)*	0.421 *(0.256)*	16.66 *(3.282)*	187 *(86.3)*	58 *(14.5)*	75 *(23.6)*	29.04 *(98.07)*
Standard Power Take-off Speed (540 rpm) — One Hour									
	21.45 *(16.00)*	2432	1.249 *(4.728)*	0.408 *(0.248)*	17.18 *(3.383)*	191 *(88.3)*	59 *(15.1)*	75 *(24.1)*	29.03 *(98.03)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	18.28 *(13.63)*	2649	1.125 *(4.258)*	0.432 *(0.262)*	16.25 *(3.202)*	184 *(84.4)*	59 *(15.0)*	75 *(23.9)*	—
	0.00 *(0.00)*	2784	0.411 *(1.554)*	—	—	180 *(82.2)*	59 *(15.0)*	75 *(23.9)*	—
	9.36 *(6.98)*	2703	0.731 *(2.769)*	0.548 *(0.333)*	12.80 *(2.521)*	182 *(83.3)*	60 *(15.3)*	76 *(24.2)*	—
	20.93 *(15.61)*	2603	1.240 *(4.695)*	0.416 *(0.253)*	16.88 *(3.325)*	187 *(86.1)*	60 *(15.6)*	76 *(24.4)*	—
	4.76 *(3.55)*	2757	0.599 *(2.267)*	0.882 *(0.537)*	7.95 *(1.566)*	181 *(82.5)*	60 *(15.3)*	75 *(23.9)*	—
	13.90 *(10.36)*	2679	0.920 *(3.481)*	0.464 *(0.282)*	15.11 *(2.977)*	183 *(83.9)*	59 *(15.0)*	75 *(23.9)*	—
Av *Av*	**11.21** *(8.36)*	**2696**	**0.838** *(3.171)*	**0.524** *(0.319)*	**13.38** *(2.635)*	**183** *(83.8)*	**59** *(15.2)*	**75** *(24.0)*	**29.04** *(98.06)*

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 6th (H-2) Gear											
16.88 *(12.59)*	1260 *(5.60)*	5.03 *(8.09)*	2600	8.61	1.255 *(4.749)*	0.521 *(0.317)*	13.46 *(2.651)*	187 *(86.1)*	48 *(8.6)*	57 *(13.6)*	28.59 *(96.53)*
75% of Pull at Maximum Power — Ten Hours 6th (H-2) Gear											
13.62 *(10.16)*	964 *(4.29)*	5.30 *(8.53)*	2676	6.42	1.102 *(4.172)*	0.567 *(0.345)*	12.36 *(2.435)*	186 *(85.5)*	44 *(6.6)*	54 *(12.1)*	28.76 *(97.12)*
50% of Pull at Maximum Power — Two Hours 6th (H-2) Gear											
9.34 *(6.96)*	644 *(2.86)*	5.44 *(8.76)*	2695	4.52	0.875 *(3.314)*	0.657 *(0.400)*	10.67 *(2.102)*	185 *(85.0)*	45 *(6.9)*	49 *(9.4)*	28.92 *(97.66)*
50% of Pull at Reduced Engine Speed — Two Hours 7th (H-3) Gear											
9.34 *(6.97)*	644 *(2.86)*	5.44 *(8.76)*	1715	4.61	0.739 *(2.796)*	0.554 *(0.337)*	12.65 *(2.492)*	186 *(85.3)*	43 *(6.1)*	47 *(8.3)*	28.68 *(96.85)*
MAXIMUM POWER IN SELECTED GEARS											
12.40 *(9.24)*	2103 *(9.35)*	2.21 *(3.56)*	2678	14.92	4th (L-4) Gear			185 *(85.0)*	40 *(4.4)*	42 *(5.6)*	28.72 *(96.98)*
17.00 *(12.68)*	1854 *(8.24)*	3.44 *(5.54)*	2599	12.94	5th (H-1) Gear			186 *(85.3)*	44 *(6.7)*	49 *(9.4)*	28.96 *(97.79)*
17.28 *(12.89)*	1285 *(5.72)*	5.04 *(8.12)*	2601	8.36	6th (H-2) Gear			186 *(85.3)*	43 *(6.1)*	48 *(8.9)*	28.98 *(97.86)*
16.03 *(11.96)*	732 *(3.25)*	8.22 *(13.23)*	2599	4.84	7th (H-3) Gear			186 *(85.3)*	45 *(7.2)*	49 *(9.4)*	28.95 *(97.76)*

LUGGING ABILITY IN 6th (H-2) GEAR

Crankshaft Speed rpm	2601	2334	2083	1819	1564	1313
Pull—lbs *(kN)*	1285 *(5.72)*	1476 *(6.57)*	1626 *(7.23)*	1756 *(7.81)*	1800 *(8.01)*	1735 *(7.72)*
Increase in Pull %	0	15	27	37	40	35
Power—Hp *(kW)*	17.28 *(12.89)*	17.55 *(13.09)*	17.06 *(12.72)*	15.90 *(11.85)*	13.94 *(10.39)*	11.34 *(8.46)*
Speed—Mph *(km/h)*	5.04 *(8.12)*	4.46 *(7.18)*	3.94 *(6.33)*	3.39 *(5.46)*	2.90 *(4.67)*	2.45 *(3.94)*
Slip %	8.36	9.69	10.67	11.86	12.25	11.86

Department of Agricultural Engineering

Dates of Test: October 28 to November 5, 1985

Manufacturer: KUBOTA, LTD., 2-47, Shikitsuhigashi 1-chome, Naniwaku, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8424 **Fuel weight** 7.014 lbs/gal *(0.841 kg/l)* **Oil SAE** 20W **API service classification** CC-CD-SE **To motor** 1.088 gal *(4.120 l)* **Drained from motor** 1.097 gal *(4.154 l)* **Transmission and final drive lubricant** Shell Donax TD or equivalent **Front axle lubricant** SAE 80-90 gear oil **Total time engine was operated** 39.5 hours.

ENGINE: Make Kubota Diesel **Type** three cylinder vertical **Serial No.** D1302-DI-A-11943 **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 3.23" × 3.23" *(82 mm × 82 mm)* **Compression ratio** 18 to 1 **Displacement** 79.3 cu in *(1299 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element **Oil filter** one full flow cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** L2250D-51189 **Tread width** rear 40.0" *(1015 mm)* to 44.7" *(1135 mm)* front 39.8" *(1010 mm)* **Wheel base** 64.6" *(1640 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30.3" *(770 mm)* Vertical distance above roadway 28.5" *(725 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 0.9 *(1.4)* second 1.2 *(1.9)* third 1.9 *(3.0)* fourth 2.7 *(4.3)* fifth 4.2 *(6.7)* sixth 5.8 *(9.4)* seventh 9.1 *(14.7)* eighth 12.9 *(20.8)* reverse 0.8 *(1.3)*, 1.1 *(1.7)*, 1.7 *(2.7)*, 2.4 *(3.9)*, 3.8 *(6.0)*, 5.2 *(8.4)*, 8.2 *(13.2)* **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc operated by two foot pedals which can be locked together **Steering** mechanical **Turning radius** (on concrete surface with brake applied) right 87" *(2.2 m)* left 87" *(2.2 m)* (on concrete surface without brake) right 95" *(2.4 m)* left 95" *(2.4 m)* **Turning space diameter** (on concrete surface with brake applied) right 181" *(4.6 m)* left 181" *(4.6 m)* (on concrete surface without brake) right 197" *(5.0 m)* left 197" *(5.0 m)* **Power take-off** 540 rpm at 2432 engine rpm **Unladen tractor mass** 2425 lb *(1100 kg)*.

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged
Maximum Available Power—Two Hours	90.5	89.5
75% of Pull at Maximum Power—Ten Hours		90.0
50% of Pull at Maximum Power—Two Hours		89.5
50% of Pull at Reduced Engine Speed—Two Hours		87.0
Bystander in 8th (H-4) gear		82.0

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp °F *(°C)* Cooling med	Temp °F *(°C)* Air wet bulb	Temp °F *(°C)* Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 6th (H-2) Gear											
16.84 *(12.56)*	1193 *(5.31)*	5.29 *(8.52)*	2599	6.14	1.283 *(4.857)*	0.534 *(0.325)*	13.13 *(2.586)*	188 *(86.4)*	49 *(9.2)*	60 *(15.3)*	28.52 *(96.29)*
MAXIMUM POWER IN SELECTED GEARS											
15.98 *(11.92)*	2673 *(11.89)*	2.24 *(3.61)*	2646	14.84	4th (L-4) Gear			186 *(85.3)*	39 *(3.9)*	41 *(5.0)*	28.72 *(96.98)*
17.11 *(12.76)*	1737 *(7.72)*	3.69 *(5.95)*	2600	8.86	5th (H-1) Gear			186 *(85.3)*	44 *(6.7)*	49 *(9.4)*	28.97 *(97.83)*
17.20 *(12.83)*	1216 *(5.41)*	5.30 *(8.54)*	2601	6.07	6th (H-2) Gear			186 *(85.3)*	42 *(5.6)*	46 *(7.8)*	28.99 *(97.89)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 9.5-24; 4; 14 *(95)*	Two 9.5-24; 4; 14 *(95)*
Ballast	—Liquid (each)	175 lb *(79 kg)*	None
	—Cast Iron (each)	48 lb *(22 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 6-14; 4; 28 *(195)*	Two 6-14; 4; 28 *(195)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	42 lb *(19 kg)*	None
Height of Drawbar		13 in *(330 mm)*	13 in *(330 mm)*
Static Weight with Operator	—Rear	1900 lb *(862 kg)*	1455 lb *(660 kg)*
	—Front	1250 lb *(558 kg)*	1145 lb *(519 kg)*
	—Total	3150 lb *(1420 kg)*	2600 lb *(1179 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2250	*(15510)*	
Location	lift cylinder		
Hydraulic oil temperature °F *(°C)*	164	*(73)*	
Location	hydraulic filter		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs *(kg)*	1540	*(699)*	
TIME sec	2.51		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.3	*(312)*	
Top of timed range	32.3	*(820)*	
Highest position	** 32.5	*(826)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.4	*(290)*	
Top of timed range	37.7	*(958)*	
Highest position	38.3	*(973)*	

*Implement load capacity for transport purposes not specified by manufacturer

** The observed power range, 20.2 in *(514 mm)* is less than the minimum power range for Cat I, 22 in *(559 mm)* specified by ASAE Standard S217.10

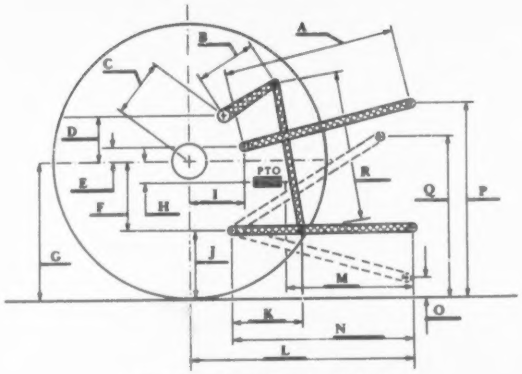
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 111°F *(43.9°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1585**, December 4, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	25.0	*635*
B	9.1	*230*
C	12.0	*305*
D	12.0	*305*
E	9.9	*251*
F	3.4	*85*
G	19.1	*485*
H	−0.6	*−16*
I	4.7	*120*
J	15.8	*400*
K	11.2	*285*
L	29.2	*742*
M	22.4	*569*
N	24.8	*630*
O	6.5	*165*
P	33.8	*857*
Q	28.9	*733*
R	17.0	*432*

Kubota L2250 4WD Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1586—KUBOTA L2550 4WD DIESEL
ALSO KUBOTA L2550 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 610 rpm)								
23.98 (17.88)	2600	1.470 (5.564)	0.430 (0.261)	16.32 (3.214)	196 (91.1)	58 (14.4)	75 (23.9)	28.75 (97.10)
Standard Power Take-off Speed (541 rpm) — One Hour								
24.24 (18.07)	2304	1.467 (5.553)	0.425 (0.258)	16.52 (3.254)	210 (98.7)	55 (13.0)	76 (24.3)	28.77 (97.14)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
21.26 (15.85)	2708	1.343 (5.084)	0.443 (0.270)	15.83 (3.118)	189 (86.9)	55 (12.5)	75 (23.9)	
0.00 (0.00)	2847	0.466 (1.765)			179 (81.7)	54 (12.2)	74 (23.3)	
10.88 (8.12)	2779	0.851 (3.222)	0.548 (0.334)	12.79 (2.519)	181 (82.8)	55 (12.5)	74 (23.3)	
24.21 (18.06)	2600	1.463 (5.537)	0.424 (0.258)	16.55 (3.261)	195 (90.6)	55 (12.8)	76 (24.4)	
5.54 (4.13)	2822	0.642 (2.429)	0.813 (0.494)	8.63 (1.700)	180 (81.9)	56 (13.1)	75 (23.9)	
16.17 (12.06)	2752	1.074 (4.064)	0.466 (0.283)	15.06 (2.967)	183 (83.9)	55 (12.8)	75 (23.9)	
Av 13.01 **Av (9.70)**	**2751**	**0.973** **(3.683)**	**0.525** **(0.319)**	**13.37** **(2.634)**	**184** **(84.6)**	**55** **(12.6)**	**75** **(23.8)**	**28.76** **(97.13)**

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 6th (H-2) Gear											
19.76 (14.74)	1421 (6.32)	5.22 (8.40)	2600	8.00	1.490 (5.640)	0.529 (0.322)	13.27 (2.613)	191 (88.3)	47 (8.3)	58 (14.2)	29.10 (98.25)
75% of Pull at Maximum Power — Ten Hours 6th (H-2) Gear											
16.12 (12.02)	1089 (4.84)	5.55 (8.93)	2745	7.27	1.302 (4.927)	0.566 (0.344)	12.39 (2.440)	185 (84.9)	38 (3.3)	39 (3.9)	29.00 (97.92)
50% of Pull at Maximum Power — Two Hours 6th (H-2) Gear											
11.11 (8.28)	726 (3.23)	5.74 (9.23)	2773	5.19	1.053 (3.986)	0.665 (0.404)	10.55 (2.078)	184 (84.2)	35 (1.4)	36 (1.9)	29.00 (97.93)
50% of Pull at Reduced Engine Speed — Two Hours 7th (H-3) Gear											
11.11 (8.29)	727 (3.23)	5.73 (9.22)	1766	5.35	0.890 (3.370)	0.562 (0.342)	12.48 (2.458)	184 (84.4)	35 (1.7)	36 (2.2)	29.01 (97.95)
MAXIMUM POWER IN SELECTED GEARS											
15.29 (11.40)	2446 (10.88)	2.34 (3.77)	2751	14.78	4th (L-4) Gear			184 (84.4)	41 (5.0)	45 (7.2)	28.84 (97.39)
19.81 (14.77)	2080 (9.25)	3.57 (5.75)	2600	12.30	5th (H-1) Gear			188 (86.4)	42 (5.6)	50 (10.0)	29.14 (98.40)
20.23 (15.08)	1452 (6.46)	5.22 (8.41)	2602	7.89	6th (H-2) Gear			189 (87.2)	45 (7.2)	54 (12.2)	29.12 (98.33)
18.64 (13.90)	825 (3.67)	8.48 (13.64)	2600	4.84	7th (H-3) Gear			191 (88.1)	43 (6.1)	51 (10.6)	29.13 (98.37)

LUGGING ABILITY IN 6th (H-2) GEAR

Crankshaft Speed rpm	2602	2342	2084	1813	1564	1299
Pull—lbs (kN)	1452 (6.46)	1664 (7.40)	1839 (8.18)	1893 (8.42)	1904 (8.47)	1854 (8.25)
Increase in Pull %	0	15	27	30	31	28
Power—Hp (kW)	20.23 (15.08)	20.56 (15.33)	19.92 (14.85)	17.75 (13.24)	15.40 (11.48)	12.50 (9.32)
Speed—Mph (km/h)	5.22 (8.41)	4.63 (7.46)	4.06 (6.54)	3.52 (5.66)	3.03 (4.88)	2.53 (4.07)
Slip %	7.89	9.41	10.59	11.00	11.16	10.75

Department of Agricultural Engineering

Dates of Test: October 28 to November 13, 1985

Manufacturer: KUBOTA, LTD., 2-47 Shikitsu-higashi, 1-chome, Naniwaku, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8424 **Fuel weight** 7.014 lbs/gal *(0.841 kg/l)* **Oil SAE** 20W **API service classification** CC-CD-SE **To motor** 1.152 gal *(4.360 l)* **Drained from motor** 1.107 gal *(4.189 l)* **Transmission and final drive lubricant** Shell Donax TD or equivalent **Front axle lubricant** SAE 80-90 gear oil **Total time engine was operated** 46.5 hours.

ENGINE: Make Kubota Diesel **Type** three cylinder vertical **Serial No.** D1402-DI-A-11759 **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 3.35" × 3.23" *(85 mm × 82 mm)* **Compression ratio** 18 to 1 **Displacement** 85.1 cu in *(1395 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element **Oil filter** one full flow cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** L2550D-51311 **Tread width** rear 40.6" *(1030 mm)* to 55.1" *(1400 mm)* front 44.1" *(1120 mm)* **Wheel base** 64.6" *(1640 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 29.7" *(755 mm)* Vertical distance above roadway 29.0" *(737 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 0.9 *(1.5)* second 1.3 *(2.0)* third 2.0 *(3.2)* fourth 2.8 *(4.5)* fifth 4.4 *(7.0)* sixth 6.1 *(9.8)* seventh 9.5 *(15.4)* eighth 13.5 *(21.7)* reverse 0.8 *(1.3)*, 1.1 *(1.8)*, 1.8 *(2.9)*, 2.5 *(4.0)*, 3.9 *(6.3)*, 5.5 *(8.8)*, 8.6 *(13.8)* **Clutch** dual dry disc in combination with PTO operated by foot pedal **Brakes** multiple wet disc operated by two foot pedals which can be locked together **Steering** mechanical **Turning radius** (on concrete surface with brake applied) right 90" *(2.3 m)* left 90" *(2.3 m)*(on concrete surface without brake) right 98" *(2.5 m)* left 98" *(2.5 m)* **Turning space diameter** (on concrete surface with brake applied) right 189" *(4.8 m)* left 189" *(4.8 m)*(on concrete surface without brake) right 205" *(5.2 m)* left 205" *(5.2 m)* **Power take-off** 541 rpm at 2304 engine rpm **Unladen tractor mass** 2575 lb *(1168 kg)*.

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged
Maximum Available Power—Two Hours	91.0	91.0
75% of Pull at Maximum Power—Ten Hours		91.0
50% of Pull at Maximum Power—Two Hours		89.5
50% of Pull at Reduced Engine Speed—Two Hours		86.5
Bystander in 8th (H-4) gear		83.0

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 6th (H-2) Gear											
19.96 (14.88)	1381 (6.14)	5.42 (8.72)	2600	5.04	1.483 (5.613)	0.521 (0.317)	13.46 (2.651)	192 (88.9)	49 (9.4)	60 (15.6)	29.05 (98.10)
MAXIMUM POWER IN SELECTED GEARS											
14.61 (10.89)	3278 (14.58)	1.67 (2.69)	2754	14.78	3rd (L-3) Gear			184 (84.4)	44 (6.7)	51 (10.6)	28.82 (97.32)
20.31 (15.14)	2014 (8.96)	3.78 (6.09)	2601	7.83	5th (H-1) Gear			187 (86.1)	41 (5.0)	49 (9.4)	29.15 (98.44)
20.19 (15.05)	1396 (6.21)	5.42 (8.73)	2601	5.09	6th (H-2) Gear			193 (89.2)	49 (9.4)	60 (15.6)	29.05 (98.10)

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi (kPa)	Two 11.2-24; 4; 14 (95)	Two 11.2-24; 4; 14 (95)
Ballast	—Liquid (each)	192 lb (87 kg)	None
	—Cast Iron (each)	210 lb (95 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 7-16; 4; 26 (180)	Two 7-16; 4; 26 (180)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	148 lb (67 kg)	None
Height of Drawbar		13 in (330 mm)	13 in (330 mm)
Static Weight with Operator	—Rear	2360 lb (1070 kg)	1555 lb (705 kg)
	—Front	1490 lb (676 kg)	1195 lb (542 kg)
	—Total	3850 lb (1746 kg)	2750 lb (1247 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2250	(15510)	
Location	lift cylinder		
Hydraulic oil temperature °F (°C)	169	(76)	
Location	hydraulic filter		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	1		*not measured
LOAD lbs (kg)	1956	(887)	
TIME sec	2.66		
HITCH POINT MOVEMENT in (mm)			
Lowest position	12.1	(307)	
Top of timed range	32.1	(815)	
Highest position	** 32.4	(822)	
LOAD CG MOVEMENT in (mm)			
Lowest position	11.3	(287)	
Top of timed range	38.0	(965)	
Highest position	38.5	(978)	

*Implement load capacity for transport purposes not specified by manufacturer

** The observed power range, 20.3 in (515 mm) is less than the minimum power range for Cat 1, 22 in (559 mm) specified by ASAE Standard S217.10

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 116°F *(46.7°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

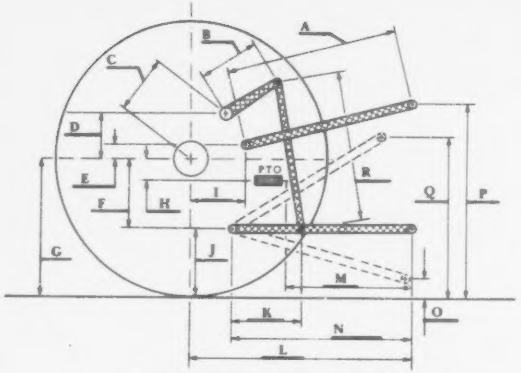
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1586**, December 4, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

NEBRASKA TRACTOR TEST 1587—KUBOTA L2850 4WD DIESEL ALSO KUBOTA L2850 DIESEL

8 SPEED



Hitch Dimensions as Tested — No Load

	inch	mm
A	24.8	*629*
B	9.1	*230*
C	12.0	*305*
D	12.0	*305*
E	9.9	*251*
F	3.4	*85*
G	19.3	*488*
H	−0.6	*−16*
I	4.7	*120*
J	15.9	*403*
K	11.2	*285*
L	29.2	*742*
M	22.4	*569*
N	24.8	*630*
O	6.4	*162*
P	33.9	*860*
Q	29.5	*749*
R	17.0	*432*

Kubota L2550 4WD Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 611 rpm)								
27.51 *(20.51)*	2600	1.692 *(6.405)*	0.431 *(0.262)*	16.26 *(3.204)*	205 *(96.2)*	57 *(13.9)*	75 *(24.0)*	29.12 *(98.32)*
Standard Power Take-off Speed (540 rpm) — One Hour								
27.96 *(20.85)*	2298	1.647 *(6.233)*	0.415 *(0.251)*	16.98 *(3.344)*	221 *(105.1)*	56 *(13.3)*	75 *(23.7)*	29.07 *(98.17)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
23.76 *(17.72)*	2642	1.501 *(5.683)*	0.443 *(0.270)*	15.83 *(3.118)*	202 *(94.2)*	55 *(12.8)*	73 *(22.8)*	—
0.00 *(0.00)*	2816	0.556 *(2.105)*	—	—	180 *(81.9)*	56 *(13.3)*	74 *(23.3)*	—
12.22 *(9.11)*	2719	0.992 *(3.756)*	0.569 *(0.346)*	12.32 *(2.426)*	182 *(83.3)*	57 *(13.9)*	75 *(23.9)*	—
28.02 *(20.89)*	2600	1.698 *(6.428)*	0.425 *(0.259)*	16.50 *(3.250)*	202 *(94.2)*	58 *(14.4)*	76 *(24.2)*	—
6.25 *(4.66)*	2778	0.783 *(2.963)*	0.879 *(0.535)*	7.98 *(1.572)*	180 *(81.9)*	58 *(14.4)*	77 *(24.7)*	—
18.08 *(13.48)*	2682	1.228 *(4.647)*	0.476 *(0.290)*	14.73 *(2.901)*	185 *(85.0)*	58 *(14.4)*	76 *(24.4)*	—
Av 14.72 **Av *(10.90)***	**2706**	**1.126** ***(4.264)***	**0.537** ***(0.326)***	**13.07** ***(2.575)***	**188** ***(86.8)***	**57** ***(13.9)***	**75** ***(23.8)***	**29.04** ***(98.07)***

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 6th (H-2) Gear											
23.08 *(17.21)*	1727 *(7.68)*	5.01 *(8.07)*	2599	7.02	1.711 *(6.476)*	0.520 *(0.316)*	13.49 *(2.658)*	202 *(94.2)*	55 *(12.8)*	70 *(21.1)*	28.61 *(96.61)*
75% of Pull at Maximum Power — Ten Hours 6th (H-2) Gear											
18.91 *(14.10)*	1347 *(5.99)*	5.27 *(8.47)*	2684	5.41	1.491 *(5.645)*	0.553 *(0.336)*	12.68 *(2.498)*	186 *(85.8)*	39 *(3.8)*	47 *(8.4)*	28.84 *(97.38)*
50% of Pull at Maximum Power — Two Hours 6th (H-2) Gear											
13.00 *(9.69)*	898 *(3.99)*	5.43 *(8.74)*	2729	4.05	1.190 *(4.506)*	0.642 *(0.391)*	10.92 *(2.151)*	185 *(85.0)*	39 *(3.9)*	46 *(7.8)*	28.88 *(97.52)*
50% of Pull at Reduced Engine Speed — Two Hours 7th (H-3) Gear											
12.99 *(9.69)*	897 *(3.99)*	5.43 *(8.75)*	1734	3.90	0.973 *(3.683)*	0.525 *(0.320)*	13.35 *(2.630)*	189 *(87.2)*	45 *(7.2)*	59 *(14.7)*	28.81 *(97.29)*
MAXIMUM POWER IN SELECTED GEARS											
19.04 *(14.19)*	3143 *(13.98)*	2.27 *(3.66)*	2680	14.72	4th (L-4) Gear			186 *(85.3)*	33 *(0.6)*	38 *(3.3)*	28.88 *(97.52)*
23.34 *(17.40)*	2542 *(11.31)*	3.44 *(5.54)*	2600	11.07	5th (H-1) Gear			200 *(93.1)*	55 *(12.8)*	70 *(21.1)*	28.66 *(96.78)*
24.02 *(17.91)*	1796 *(7.99)*	5.02 *(8.07)*	2601	7.00	6th (H-2) Gear			200 *(93.3)*	54 *(12.2)*	68 *(20.0)*	28.70 *(96.92)*
22.33 *(16.65)*	1030 *(4.58)*	8.13 *(13.09)*	2599	4.11	7th (H-3) Gear			199 *(92.8)*	55 *(12.8)*	70 *(21.1)*	28.64 *(96.71)*

LUGGING ABILITY IN 6th (H-2) GEAR

Crankshaft Speed rpm	2601	2347	2082	1826	1556	1305
Pull—lbs *(kN)*	1796 *(7.99)*	2024 *(9.00)*	2237 *(9.95)*	2359 *(10.49)*	2312 *(10.28)*	2241 *(9.97)*
Increase in Pull %	0	13	25	31	29	25
Power—Hp *(kW)*	24.02 *(17.91)*	24.14 *(18.00)*	23.40 *(17.45)*	21.48 *(16.01)*	17.94 *(13.38)*	14.65 *(10.93)*
Speed—Mph *(km/h)*	5.02 *(8.07)*	4.47 *(7.20)*	3.92 *(6.31)*	3.41 *(5.49)*	2.91 *(4.68)*	2.45 *(3.95)*
Slip %	7.00	8.15	9.27	9.91	9.81	9.36

Department of Agricultural Engineering

Dates of Test: October 30 to November 7, 1985

Manufacturer: KUBOTA, LTD., 2-47 Shikitsu-higashi, 1-chome, Naniwaku, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8424 **Fuel weight** 7.014 lbs/gal *(0.841 kg/l)* **Oil SAE** 20W **API service classification** CC-CD-SE **To motor** 1.597 gal *(6.045 l)* **Drained from motor** 1.518 gal *(5.747 l)* **Transmission and final drive lubricant** Shell Donax TD or equivalent **Front axle lubricant** SAE 80-90 gear oil **Total time engine was operated** 39.5 hours.

ENGINE: Make Kubota Diesel **Type** four cylinder vertical **Serial No.** V1702-DI-A-11319 **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 3.23" × 3.23" *(82 mm × 82 mm)* **Compression ratio** 18 to 1 **Displacement** 105.7 cu in *(1732 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element **Oil filter** one full flow cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** L2850D-50954 **Tread width** rear 41.3" *(1050 mm)* to 59.6" *(1515 mm)* front 44.1" *(1120 mm)* **Wheel base** 68.3" *(1735 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30.6" *(777 mm)* Vertical distance above roadway 29.5" *(750 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 0.8 *(1.3)* second 1.1 *(1.8)* third 1.8 *(2.9)* fourth 2.6 *(4.2)* fifth 3.9 *(6.3)* sixth 5.5 *(8.8)* seventh 8.6 *(13.8)* eighth 12.7 *(20.4)* reverse 0.7 *(1.2)*, 1.0 *(1.6)*, 1.6 *(2.6)*, 2.4 *(3.8)*, 3.5 *(5.7)*, 4.9 *(7.9)*, 7.7 *(12.4)* **Clutch** dual dry disc in combination with PTO operated by foot pedal **Brakes** multiple wet disc operated by two foot pedals which can be locked together **Steering** mechanical **Turning radius** (on concrete surface with brake applied) right 95" *(2.4 m)* left 95" *(2.4 m)*(on concrete surface without brake) right 110" *(2.8 m)* left 110" *(2.8 m)* **Turning space diameter** (on concrete surface with brake applied) right 197" *(5.0 m)* left 197" *(5.0 m)*(on concrete surface without brake) right 228" *(5.8 m)* left 228" *(5.8 m)* **Power take-off** 540 rpm at 2298 engine rpm **Unladen tractor mass** 2790 lb *(1266 kg)*

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged
Maximum Available Power—Two Hours	90.5	90.0
75% of Pull at Maximum Power—Ten Hours		89.5
50% of Pull at Maximum Power—Two Hours		90.0
50% of Pull at Reduced Engine Speed—Two Hours		87.5
Bystander in 8th (H-4) gear		91.5

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crankshaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F *(°C)* Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 6th (H-2) Gear											
23.16 *(17.27)*	1687 *(7.50)*	5.15 *(8.29)*	2599	4.63	1.704 *(6.449)*	0.516 *(0.314)*	13.59 *(2.678)*	202 *(94.2)*	54 *(11.9)*	65 *(18.3)*	28.59 *(96.54)*
MAXIMUM POWER IN SELECTED GEARS											
16.63 *(12.40)*	4030 *(17.93)*	1.55 *(2.49)*	2696	14.95	3rd (L-3) Gear			185 *(84.7)*	35 *(1.7)*	40 *(4.4)*	28.90 *(97.59)*
23.74 *(17.71)*	2477 *(11.02)*	3.60 *(5.79)*	2601	7.45	5th (H-1) Gear			200 *(93.1)*	55 *(12.8)*	69 *(20.6)*	28.68 *(96.85)*
23.93 *(17.84)*	1744 *(7.76)*	5.14 *(8.28)*	2599	4.73	6th (H-2) Gear			199 *(92.8)*	53 *(11.7)*	66 *(18.9)*	28.72 *(96.98)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Two 12.4-24; 4; 14 *(95)*	Two 12.4-24; 4; 14 *(95)*
Ballast	—Liquid (each)	265 lb *(120 kg)*	None
	—Cast Iron (each)	320 lb *(145 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 7-16; 4; 26 *(180)*	Two 7-16; 4; 26 *(180)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	222 lb *(101 kg)*	None
Height of Drawbar		13 in *(330 mm)*	13 in *(330 mm)*
Static Weight with Operator	—Rear	2855 lb *(1295 kg)*	1685 lb *(764 kg)*
	—Front	1725 lb *(782 kg)*	1280 lb *(581 kg)*
	—Total	4580 lb *(2077 kg)*	2965 lb *(1345 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2275	*(15690)*	
Location	lift cylinder		
Hydraulic oil temperature °F *(°C)*	189	*(87)*	
Location	hydraulic filter		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs *(kg)*	2046	*(928)*	
TIME sec	2.38		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.1	*(308)*	
Top of timed range	32.1	*(816)*	
Highest position	** 32.8	*(834)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.1	*(282)*	
Top of timed range	36.9	*(937)*	
Highest position	37.9	*(963)*	

*Implement load capacity for transport purposes not specified by manufacturer.
** The observed power range, 20.7 in.*(526 mm)* is less than the minimum power range for Cat I, 22 in. *(559 mm)* specified by ASAE Standard S217.10

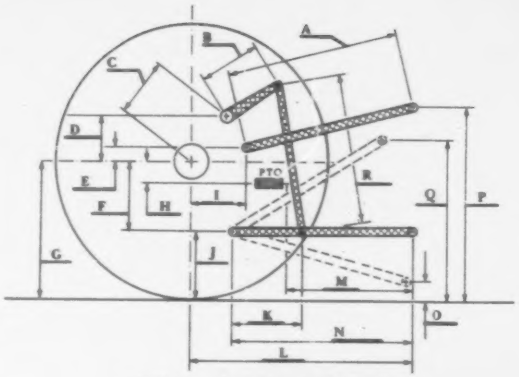
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 108°F *(42.1°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1587**, December 4, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	27.1	*689*
B	9.1	*230*
C	10.7	*272*
D	10.6	*270*
E	8.5	*216*
F	4.4	*111*
G	20.9	*530*
H	0.8	*20*
I	3.1	*79*
J	16.5	*419*
K	12.2	*309*
L	29.8	*757*
M	22.9	*583*
N	26.8	*680*
O	6.6	*168*
P	34.5	*876*
Q	29.9	*759*
R	17.3	*438*

Kubota L2850 4WD Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1588—KUBOTA L3350 4WD DIESEL ALSO KUBOTA L3350 DIESEL

8 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Temperature °F (°C) Air wet bulb	Temperature °F (°C) Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed — 626 rpm)								
32.86 *(24.50)*	2600	1.990 *(7.534)*	0.425 *(0.258)*	16.51 *(3.252)*	183 *(83.9)*	59 *(14.8)*	75 *(23.8)*	28.73 *(97.01)*
Standard Power Take-off Speed (540 rpm) — One Hour								
33.29 *(24.82)*	2243	1.943 *(7.356)*	0.409 *(0.249)*	17.13 *(3.374)*	185 *(85.2)*	59 *(15.2)*	76 *(24.3)*	28.65 *(96.75)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
28.61 *(21.33)*	2662	1.762 *(6.671)*	0.432 *(0.263)*	16.23 *(3.198)*	181 *(82.5)*	60 *(15.3)*	74 *(23.3)*	—
0.00 *(0.00)*	2839	0.624 *(2.364)*	—	—	178 *(81.1)*	59 *(15.0)*	74 *(23.1)*	—
14.71 *(10.97)*	2740	1.133 *(4.291)*	0.541 *(0.329)*	12.98 *(2.556)*	180 *(82.2)*	59 *(15.0)*	74 *(23.3)*	—
33.36 *(24.88)*	2599	2.010 *(7.610)*	0.423 *(0.257)*	16.60 *(3.269)*	184 *(84.2)*	60 *(15.3)*	75 *(23.6)*	—
7.51 *(5.60)*	2802	0.885 *(3.351)*	0.826 *(0.503)*	8.49 *(1.672)*	179 *(81.7)*	60 *(15.6)*	76 *(24.2)*	—
21.80 *(16.26)*	2709	1.424 *(5.392)*	0.458 *(0.279)*	15.31 *(3.015)*	181 *(82.5)*	60 *(15.6)*	75 *(23.9)*	—
Av 17.67 **Av *(13.17)***	**2725**	**1.307** ***(4.946)***	**0.519** ***(0.316)***	**15.52** ***(2.663)***	**180** ***(82.4)***	**60** ***(15.3)***	**74** ***(23.6)***	**28.63** ***(96.66)***

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 6th Gear											
26.49 *(19.75)*	2026 *(9.01)*	4.90 *(7.89)*	2600	7.61	1.989 *(7.529)*	0.527 *(0.320)*	13.32 *(2.623)*	185 *(85.0)*	40 *(4.4)*	46 *(7.5)*	28.75 *(97.07)*
75% of Pull at Maximum Power — Ten Hours 6th Gear											
21.72 *(16.19)*	1572 *(6.99)*	5.18 *(8.34)*	2692	5.78	1.699 *(6.433)*	0.549 *(0.334)*	12.78 *(2.517)*	185 *(84.8)*	33 *(0.6)*	34 *(1.2)*	29.13 *(98.35)*
50% of Pull at Maximum Power — Two Hours 6th Gear											
14.95 *(11.15)*	1048 *(4.66)*	5.35 *(8.61)*	2724	3.86	1.349 *(5.108)*	0.633 *(0.385)*	11.08 *(2.183)*	185 *(85.0)*	46 *(7.8)*	54 *(11.9)*	28.57 *(96.48)*
50% of Pull at Reduced Engine Speed — Two Hours 7th Gear											
14.94 *(11.14)*	1047 *(4.66)*	5.35 *(8.61)*	1658	3.69	1.131 *(4.280)*	0.551 *(0.323)*	13.21 *(2.603)*	186 *(85.6)*	43 *(5.8)*	49 *(9.2)*	28.58 *(96.51)*
MAXIMUM POWER IN SELECTED GEARS											
24.82 *(18.51)*	3434 *(15.27)*	2.71 *(4.36)*	2655	15.00	4th Gear			185 *(85.0)*	38 *(3.3)*	42 *(5.6)*	28.78 *(97.19)*
26.61 *(19.85)*	2826 *(12.57)*	3.53 *(5.68)*	2599	10.79	5th Gear			186 *(85.3)*	46 *(7.8)*	59 *(15.0)*	28.79 *(97.22)*
27.49 *(20.50)*	2096 *(9.32)*	4.92 *(7.92)*	2600	7.33	6th Gear			185 *(85.0)*	43 *(6.1)*	55 *(12.8)*	28.80 *(97.25)*
25.28 *(18.85)*	1132 *(5.04)*	8.37 *(13.48)*	2600	3.86	7th Gear			185 *(85.0)*	45 *(7.2)*	58 *(14.4)*	28.79 *(97.22)*

LUGGING ABILITY IN 6th GEAR

Crankshaft Speed rpm	2600	2330	2077	1813	1558	1296
Pull—lbs *(kN)*	2096 *(9.32)*	2376 *(10.57)*	2635 *(11.72)*	2741 *(12.19)*	2643 *(11.76)*	2577 *(11.46)*
Increase in Pull %	0	13	26	31	26	23
Power—Hp *(kW)*	27.49 *(20.50)*	27.58 *(20.57)*	26.92 *(20.07)*	24.28 *(18.11)*	20.20 *(15.06)*	16.44 *(12.26)*
Speed—Mph *(km/h)*	4.92 *(7.92)*	4.35 *(7.01)*	3.83 *(6.17)*	3.32 *(5.35)*	2.87 *(4.61)*	2.39 *(3.85)*
Slip %	7.33	8.63	9.70	10.27	9.99	9.70

Department of Agricultural Engineering

Dates of Test: October 30 to November 12, 1985

Manufacturer: KUBOTA, LTD., 2-47, Shikitsu-higashi 1-chome Naniwaku, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8424 **Fuel weight** 7.014 lbs/gal *(0.841 kg/l)* **Oil SAE** 20W **API service classification** CC-CD-SE **To motor** 1.717 gal *(6.499 l)* **Drained from motor** 1.527 gal *(5.781 l)* **Transmission and final drive lubricant** Shell Donax TD or equivalent **Front axle lubricant** SAE 80-90 gear oil **Total time engine was operated** 37.5 hours.

ENGINE: Make Kubota Diesel **Type** four cylinder vertical **Serial No.** V1902-DI-A-10456 **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 3.35" × 3.23" *(85 mm × 82 mm)* **Compression ratio** 18 to 1 **Displacement** 113.6 cu in *(1861 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** L3350DT-50477 **Tread width** rear 48" *(1220 mm)* to 68" *(1720 mm)* front 50" *(1265 mm)* **Wheel base** 72.6" *(1845 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 29.5" *(750 mm)* Vertical distance above roadway 29.0" *(737 mm)* Horizontal distance from center of rear wheel tread 0.4" *(10 mm)* to the right **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 0.9 *(1.5)* second 1.2 *(2.0)* third 2.0 *(3.3)* fourth 3.2 *(5.0)* fifth 4.0 *(6.4)* sixth 5.4 *(8.6)* seventh 8.8 *(14.2)* eighth 13.5 *(21.7)* reverse 0.9 *(1.5)*, 1.2 *(2.0)*, 2.0 *(3.3)*, 3.1 *(5.0)*, 3.9 *(6.4)*, 5.3 *(8.6)*, 8.7 *(14.1)*, 13.4 *(21.6)* **Clutch** dual dry disc in combination with PTO operated by foot pedal **Brakes** multiple wet disc operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 106" *(2.7 m)* left 106" *(2.7 m)*(on concrete surface without brake) right 126" *(3.2 m)* left 126" *(3.2 m)* **Turning space diameter** (on concrete surface with brake applied) right 228" *(5.8 m)* left 228" *(5.8 m)*(on concrete surface without brake) right 263 " *(6.7 m)* left 263" *(6.7 m)* **Power take-off** 540 rpm at 2243 engine rpm **Unladen tractor mass** 4010 lb *(1819 kg)*.

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged
Maximum Available Power—Two Hours	92.5	92.0
75% of Pull at Maximum Power—Ten Hours		92.0
50% of Pull at Maximum Power—Two Hours		91.0
50% of Pull at Reduced Engine Speed—Two Hours		88.5
Bystander in 8th gear		83.5

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 6th Gear											
26.66 *(19.88)*	1967 *(8.75)*	5.08 *(8.18)*	2598	5.35	1.975 *(7.475)*	0.519 *(0.316)*	13.50 *(2.660)*	186 *(85.6)*	44 *(6.7)*	51 *(10.3)*	28.66 *(96.76)*
MAXIMUM POWER IN SELECTED GEARS											
21.39 *(15.95)*	4430 *(19.71)*	1.81 *(2.91)*	2687	14.94	3rd Gear			185 *(84.7)*	35 *(1.7)*	39 *(3.9)*	28.79 *(97.22)*
27.36 *(20.40)*	2768 *(12.31)*	3.71 *(5.97)*	2600	7.42	5th Gear			186 *(85.3)*	46 *(7.8)*	60 *(15.6)*	28.79 *(97.22)*
27.53 *(20.53)*	2028 *(9.02)*	5.09 *(8.19)*	2600	5.22	6th Gear			185 *(85.0)*	44 *(6.7)*	57 *(13.9)*	28.80 *(97.25)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 13.6-24, 6, 22 *(150)*	Two 13.6-24, 6, 22 *(150)*
Ballast	—Liquid (each)	256 lb *(116 kg)*	None
	—Cast Iron (each)	207 lb *(94 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 8-16, 6, 34 *(235)*	Two 8-16, 6, 34 *(235)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	115 lb *(52 kg)*	None
Height of Drawbar		14 in *(355 mm)*	14 in *(355 mm)*
Static Weight with Operator	—Rear	3455 lb *(1567 kg)*	2530 lb *(1147 kg)*
	—Front	1885 lb *(855 kg)*	1655 lb *(751 kg)*
	—Total	5340 lb *(2422 kg)*	4185 lb *(1898 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2525	*(17410)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	178	*(81)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs *(kg)*	2652	*(1203)*	
TIME sec	1.39		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	8.7	*(221)*	
Top of timed range	30.7	*(780)*	
Highest position	32.0	*(813)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	8.5	*(216)*	
Top of timed range	32.5	*(826)*	
Highest position	34.5	*(876)*	

*Implement load capacity for transport purposes not specified by manufacturer.

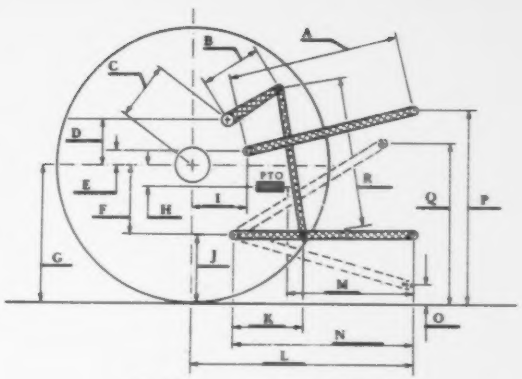
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 122°F *(49.8°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1588**, December 4, 1985.

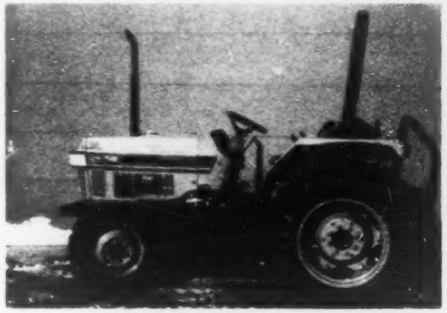
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	23.5	*597*
B	9.5	*240*
C	11.6	*294*
D	11.0	*279*
E	10.6	*269*
F	7.1	*180*
G	22.1	*561*
H	0.5	*13*
I	11.9	*301*
J	15.0	*381*
K	14.6	*370*
L	35.2	*894*
M	20.3	*517*
N	31.1	*790*
O	8.0	*203*
P	33.0	*838*
Q	32.1	*816*
R	18.5	*470*



Kubota L3350 4WD Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1555—KUBOTA L3750 4WD DIESEL
ALSO KUBOTA L3750 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F *(°C)* Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —602 rpm)								
36.96 *(27.56)*	2500	2.232 *(8.449)*	0.421 *(0.256)*	16.56 *(3.263)*	186 *(85.6)*	56 *(13.1)*	75 *(23.9)*	29.12 *(98.32)*
Standard Power Take-off Speed (540 rpm) — One Hour								
36.81 *(27.45)*	2243	2.125 *(8.044)*	0.403 *(0.245)*	17.32 *(3.413)*	188 *(86.5)*	56 *(13.2)*	75 *(24.1)*	29.12 *(98.33)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
31.89 *(23.78)*	2558	1.983 *(7.507)*	0.434 *(0.264)*	16.08 *(3.168)*	184 *(84.2)*	56 *(13.1)*	75 *(23.6)*	....
0.00 *(0.00)*	2687	0.701 *(2.654)*	....	....	179 *(81.7)*	56 *(13.3)*	75 *(23.9)*	....
16.29 *(12.15)*	2593	1.303 *(4.934)*	0.556 *(0.339)*	12.50 *(2.462)*	181 *(82.8)*	56 *(13.1)*	75 *(23.9)*	....
37.46 *(27.93)*	2500	2.254 *(8.533)*	0.420 *(0.255)*	16.62 *(3.274)*	187 *(85.8)*	56 *(13.3)*	76 *(24.2)*	....
8.30 *(6.19)*	2658	0.994 *(3.762)*	0.835 *(0.508)*	8.35 *(1.645)*	180 *(81.9)*	56 *(13.3)*	76 *(24.4)*	....
24.22 *(18.06)*	2570	1.635 *(6.188)*	0.471 *(0.286)*	14.82 *(2.919)*	182 *(83.3)*	56 *(13.3)*	76 *(24.2)*	....
Av **19.69** *Av* **(14.69)**	**2587**	**1.478** **(5.596)**	**0.524** **(0.318)**	**13.32** **(2.624)**	**182** **(83.3)**	**56** **(13.2)**	**75** **(24.0)**	**29.10** **(98.25)**

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 6th (H2) Gear											
30.11 *(22.45)*	2281 *(10.14)*	4.95 *(7.97)*	2501	8.24	2.266 *(8.576)*	0.525 *(0.319)*	13.29 *(2.618)*	185 *(85.0)*	39 *(3.6)*	48 *(8.9)*	29.41 *(99.30)*
75% of Pull at Maximum Power — Ten Hours 6th (H2) Gear											
24.19 *(18.04)*	1739 *(7.74)*	5.22 *(8.39)*	2569	5.90	1.937 *(7.333)*	0.558 *(0.340)*	12.49 *(2.460)*	185 *(84.8)*	42 *(5.4)*	52 *(11.0)*	29.11 *(98.29)*
50% of Pull at Maximum Power — Two Hours 6th (H2) Gear											
16.62 *(12.40)*	1160 *(5.16)*	5.37 *(8.65)*	2597	4.06	1.556 *(5.889)*	0.653 *(0.397)*	10.69 *(2.105)*	184 *(84.4)*	52 *(10.8)*	56 *(13.1)*	28.88 *(97.52)*
50% of Pull at Reduced Engine Speed — Two Hours 7th (H3) Gear											
16.58 *(12.36)*	1159 *(5.16)*	5.36 *(8.63)*	1576	3.75	1.247 *(4.722)*	0.525 *(0.319)*	13.29 *(2.618)*	186 *(85.3)*	56 *(13.3)*	63 *(17.2)*	28.86 *(97.44)*
MAXIMUM POWER IN SELECTED GEARS											
26.72 *(19.92)*	3641 *(16.19)*	2.75 *(4.43)*	2548	14.84	4th (L4) Gear			185 *(85.0)*	49 *(9.4)*	51 *(10.6)*	28.79 *(97.22)*
29.82 *(22.23)*	3175 *(14.12)*	3.52 *(5.67)*	2500	12.37	5th (H1) Gear			185 *(84.7)*	36 *(2.2)*	43 *(6.1)*	29.44 *(99.41)*
30.69 *(22.88)*	2319 *(10.32)*	4.96 *(7.99)*	2497	7.84	6th (H2) Gear			185 *(84.7)*	36 *(2.2)*	43 *(6.1)*	29.44 *(99.41)*
28.44 *(21.21)*	1262 *(5.61)*	8.45 *(13.60)*	2502	4.60	7th (H3) Gear			184 *(84.4)*	37 *(2.8)*	45 *(7.2)*	29.44 *(99.41)*

LUGGING ABILITY IN 6th (H2) GEAR

Crankshaft Speed rpm	2497	2243	2006	1751	1508	1249	1022
Pull—lbs *(kN)*	2519 *(10.32)*	2597 *(11.55)*	2775 *(12.34)*	2919 *(12.98)*	2981 *(13.26)*	3021 *(13.44)*	2971 *(13.22)*
Increase in Pull %	0	12	20	26	29	30	28
Power—Hp *(kW)*	30.69 *(22.88)*	30.48 *(22.73)*	28.86 *(21.52)*	26.24 *(19.57)*	22.97 *(17.13)*	19.21 *(14.32)*	15.51 *(11.56)*
Speed—Mph *(km/h)*	4.96 *(7.99)*	4.40 *(7.08)*	3.90 *(6.28)*	3.37 *(5.43)*	2.89 *(4.65)*	2.38 *(3.84)*	1.96 *(3.15)*
Slip %	7.84	8.99	9.91	10.71	11.21	11.50	11.31

Department of Agricultural Engineering

Dates of Test: March 25 to April 11, 1985

Manufacturer: KUBOTA, LTD., 2-47 Shikitsu-higashi, 1-chome, Naniwa-ku, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8376 **Fuel weight** 6.974 lbs/gal *(0.836 kg/l)* **Oil SAE** 20W **API service classification** CC, CD, SE **To motor** 2.202 gal *(8.335 l)* **Drained from motor** 2.119 gal *(8.022 l)* **Transmission and hydraulic lubricant** Shell Donax TD or equivalent **Front axle lubricant** SAE 80/90 gear oil **Total time engine was operated** 46.5 hours.

ENGINE: Make Kubota Diesel **Type** five cylinder vertical **Serial No.** F2302-DI-L-DC-32719 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.35" × 3.23" *(85 mm × 82 mm)* **Compression ratio** 18 to 1 **Displacement** 142 cu in *(2326 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** L3750DT-50782 **Tread width** rear 52" *(1320 mm)* to 76" *(1930 mm)* front 52" *(1320 mm)* **Wheel base** 76.4" *(1940 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30.2" *(767 mm)* Vertical distance above roadway 31.0" *(787 mm)* Horizontal distance from center of rear wheel tread 0.3" *(7 mm)* to the right **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.0 *(1.6)* second 1.3 *(2.1)* third 2.2 *(3.5)* fourth 3.3 *(5.3)* fifth 4.2 *(6.8)* sixth 5.6 *(9.1)* seventh 9.2 *(14.9)* eighth 14.2 *(22.8)* reverse 1.0 *(1.6)*, 1.3 *(2.1)*, 2.1 *(3.5)*, 3.3 *(5.3)*, 4.2 *(6.7)*, 5.6 *(9.0)*, 9.2 *(14.8)*, 14.1 *(22.6)* **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 114" *(2.9 m)* left 114" *(2.9 m)*(on concrete surface without brake) right 134" *(3.4 m)* left 134" *(3.4 m)* **Turning space diameter** (on concrete surface with brake applied) right 236" *(6.0 m)* left 236" *(6.0 m)*(on concrete surface without brake) right 276" *(7.0 m)* left 276" *(7.0 m)* **Power take-off** 540 rpm at 2243 engine rpm **Unladen tractor mass** 4240 lb *(1923 kg)*.

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	94.5	94.0
75% of Pull at Maximum Power—Ten Hours		93.5
50% of Pull at Maximum Power—Two Hours		92.5
50% of Pull at Reduced Engine Speed—Two Hours		88.5
Bystander in 8th (H4) gear		84.5

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cooling med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 6th (H2) Gear Gear											
30.15 *(22.48)*	2188 *(9.73)*	5.17 *(8.32)*	2500	5.87	2.266 *(8.576)*	0.524 *(0.319)*	13.31 *(2.622)*	185 *(84.7)*	40 *(4.4)*	51 *(10.6)*	29.33 *(99.04)*

MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
23.80 *(17.75)*	4861 *(21.62)*	1.84 *(2.95)*	2560	14.94	3rd (L3) Gear	185 *(85.0)*	48 *(8.9)*	50 *(10.0)*	28.88 *(97.52)*
30.53 *(22.77)*	3049 *(13.56)*	3.76 *(6.04)*	2501	8.20	5th (H1) Gear	185 *(84.7)*	36 *(2.2)*	44 *(6.7)*	29.44 *(99.41)*
30.57 *(22.79)*	2218 *(9.87)*	5.17 *(8.32)*	2500	5.78	6th (H2) Gear	185 *(84.7)*	35 *(1.7)*	42 *(5.6)*	29.44 *(99.41)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Two 13.6-28, 6, 14 *(95)*	Two 13.6-28, 6, 14 *(95)*
Ballast	—Liquid (each)	172 lb *(78 kg)*	None
	—Cast Iron (each)	260 lb *(118 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 9.5-16, 6, 32 *(220)*	Two 9.5-16, 6, 32 *(220)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	332 lb *(151 kg)*	None
Height of Drawbar		16 in *(405 mm)*	16 in *(405 mm)*
Static Weight with Operator	—Rear	3585 lb *(1626 kg)*	2720 lb *(1234 kg)*
	—Front	2360 lb *(1071 kg)*	1695 lb *(769 kg)*
	—Total	5945 lb *(2697 kg)*	4415 lb *(2003 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2525	*(17410)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	182	*(83)*	
Location	suction pipe		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs *(kg)*	2652	*(1203)*	
TIME sec	1.93		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	9.0	*(229)*	
Top of timed range	31.1	*(790)*	
Highest position	32.2	*(818)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	9.4	*(239)*	
Top of timed range	33.1	*(841)*	
Highest position	34.7	*(881)*	

*Implement load capacity for transport purposes not specified by manufacturer

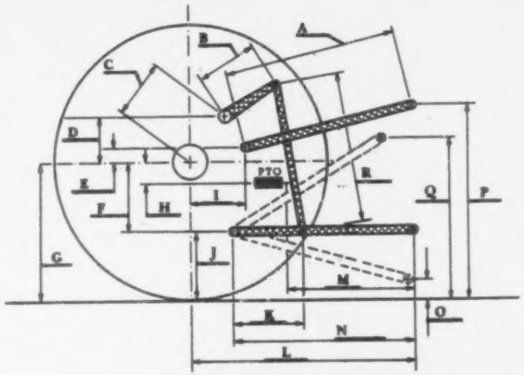
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 132°F *(55.7°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1555**, June 12, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	23.6	*600*
B	9.5	*240*
C	11.6	*294*
D	11.0	*279*
E	10.6	*269*
F	7.1	*180*
G	23.3	*593*
H	0.5	*13*
I	11.9	*301*
J	16.3	*413*
K	14.6	*370*
L	35.2	*894*
M	20.3	*517*
N	31.1	*790*
O	8.0	*203*
P	34.3	*870*
Q	32.3	*819*
R	19.0	*483*

Kubota L3750 4WD Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1556—KUBOTA L4150 4WD DIESEL
ALSO KUBOTA L4150 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F *(°C)* Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —626 rpm)								
40.64 *(30.30)*	2600	2.522 *(9.548)*	0.433 *(0.263)*	16.11 *(3.174)*	188 *(86.7)*	57 *(14.1)*	75 *(23.8)*	28.94 *(97.71)*
Standard Power Take-off Speed (540 rpm) — One Hour								
40.22 *(29.99)*	2244	2.349 *(8.891)*	0.407 *(0.248)*	17.12 *(3.373)*	194 *(90.0)*	57 *(14.1)*	75 *(23.8)*	28.89 *(97.56)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
35.37 *(26.37)*	2661	2.224 *(8.419)*	0.439 *(0.267)*	15.90 *(3.133)*	183 *(83.9)*	58 *(14.4)*	75 *(23.9)*	—
0.00 *(0.00)*	2805	0.787 *(2.980)*	—	—	177 *(80.3)*	58 *(14.2)*	75 *(23.6)*	—
18.06 *(13.47)*	2718	1.432 *(5.422)*	0.553 *(0.336)*	12.61 *(2.484)*	180 *(82.2)*	58 *(14.2)*	75 *(23.9)*	—
41.46 *(30.92)*	2600	2.555 *(9.673)*	0.430 *(0.261)*	16.23 *(3.197)*	188 *(86.7)*	58 *(14.4)*	75 *(23.9)*	—
9.18 *(6.84)*	2762	1.075 *(4.071)*	0.817 *(0.497)*	8.53 *(1.681)*	178 *(81.1)*	58 *(14.4)*	76 *(24.2)*	—
26.85 *(20.02)*	2694	1.811 *(6.855)*	0.470 *(0.286)*	14.83 *(2.921)*	181 *(82.8)*	58 *(14.4)*	75 *(23.9)*	—
Av 21.82 ***Av (16.27)***	**2706**	**1.648** ***(6.237)***	**0.527** ***(0.320)***	**13.24** ***(2.609)***	**181** ***(82.8)***	**58** ***(14.4)***	**75** ***(23.9)***	**28.87** ***(97.50)***

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F *(°C)* Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 5th (H1) Gear											
32.68 *(24.37)*	3101 *(13.79)*	3.95 *(6.36)*	2601	9.74	2.488 *(9.417)*	0.531 *(0.323)*	13.14 *(2.588)*	190 *(87.8)*	58 *(14.4)*	73 *(22.5)*	28.71 *(96.95)*
75% of Pull at Maximum Power — Ten Hours 5th (H1) Gear											
27.21 *(20.29)*	2438 *(10.84)*	4.19 *(6.74)*	2678	7.21	2.125 *(8.044)*	0.545 *(0.331)*	12.81 *(2.523)*	181 *(82.7)*	35 *(1.6)*	40 *(4.5)*	29.09 *(98.24)*
50% of Pull at Maximum Power — Two Hours 5th (H1) Gear											
18.81 *(14.02)*	1625 *(7.23)*	4.34 *(6.98)*	2708	4.84	1.699 *(6.432)*	0.630 *(0.383)*	11.07 *(2.189)*	181 [illegible]	34 *(0.8)*	38 *(3.3)*	28.93 *(97.69)*
50% of Pull at Reduced Engine Speed — Two Hours 6th (H2) Gear											
18.81 *(14.03)*	1625 *(7.23)*	4.34 *(6.99)*	2020	4.84	1.420 *(5.374)*	0.526 *(0.320)*	13.25 *(2.611)*	181 *(82.8)*	35 *(1.7)*	40 *(4.4)*	28.91 *(97.62)*
MAXIMUM POWER IN SELECTED GEARS											
22.58 *(16.84)*	4257 *(18.93)*	1.99 *(3.20)*	2693	14.77	3rd (L3) Gear			182 *(83.3)*	47 *(8.3)*	55 *(12.8)*	28.77 *(97.15)*
32.54 *(24.27)*	4129 *(18.36)*	2.96 *(4.76)*	2601	14.39	4th (L4) Gear			185 *(85.0)*	49 *(9.4)*	57 *(13.9)*	28.77 *(97.15)*
33.98 *(25.34)*	3217 *(14.31)*	3.96 *(6.38)*	2600	9.53	5th (H1) Gear			186 *(85.6)*	58 *(14.4)*	70 *(21.1)*	28.74 *(97.05)*
34.50 *(25.73)*	2366 *(10.52)*	5.47 *(8.80)*	2599	6.84	6th (H2) Gear			186 *(85.6)*	53 *(11.7)*	61 *(16.1)*	28.75 *(97.08)*
32.50 *(24.23)*	1316 *(5.85)*	9.26 *(14.91)*	2599	3.73	7th (H3) Gear			186 *(85.3)*	51 *(10.6)*	59 *(15.0)*	28.76 *(97.22)*

Department of Agricultural Engineering

Dates of Test: March 22 to April 3, 1985

Manufacturer: KUBOTA, LTD., 2-47 Shikitsu-higashi 1-chome, Naniwa-ku, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** ***(15/15°C)*** 0.8376 **Fuel weight** 6.974 lbs/gal *(0.836 kg/l)* **Oil SAE** 20W **API service classification** CC, CD, SE **To motor** 2.033 gal *(7.696 l)* **Drained from motor** 1.875 gal *(7.097 l)* **Transmission and hydraulic lubricant** Shell Donax TD or equivalent **Front axle lubricant** SAE 80/90 gear oil **Total time engine was operated** 45.5 hours.

ENGINE: Make Kubota Diesel **Type** five cylinder vertical **Serial No.** F2302-DI-DC-32717 **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 3.35" × 3.23" *(85 mm × 82 mm)* **Compression ratio** 18 to 1 **Displacement** 142 cu in *(2326 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** L4150DT-50827 **Tread width** rear 52" *(1320 mm)* to 76" *(1930 mm)* front 56" *(1420 mm)* **Wheel base** 76.4" *(1940 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30.2" *(766 mm)* Vertical distance above roadway 33.2" *(844 mm)* Horizontal distance from center of rear wheel tread 0.3" *(7 mm)* to the right **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.1 *(1.7)* second 1.4 *(2.3)* third 2.4 *(3.8)* fourth 3.6 *(5.8)* fifth 4.6 *(7.4)* sixth 6.1 *(9.9)* seventh 10.1 *(16.2)* eighth 15.4 *(24.9)* reverse 1.1 *(1.7)*, 1.4 *(2.3)*, 2.3 *(3.8)*, 3.6 *(5.8)*, 4.5 *(7.3)*, 6.1 *(9.8)*, 10.0 *(16.1)*, 15.3 *(24.7)* **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 118" *(3.0 m)* left 118" *(3.0 m)*(on concrete surface without brake) right 138" *(3.5 m)* left 138" *(3.5 m)* **Turning space diameter** (on concrete surface with brake applied) right 244" *(6.2 m)* left 244" *(6.2 m)*(on concrete surface without brake) right 283" *(7.2 m)* left 283" *(7.2 m)* **Power take-off** 540 rpm at 2244 engine rpm **Unladen tractor mass** 4350 lb *(1973 kg)*.

LUGGING ABILITY IN 5th (H1) GEAR

Crankshaft Speed rpm	2600	2327	2077	1821	1553	1308
Pull—lbs *(kN)*	3217 *(14.31)*	3551 *(15.80)*	3799 *(16.90)*	3917 *(17.42)*	3949 *(17.57)*	3913 *(17.41)*
Increase in Pull %	0	10	18	22	23	22
Power—Hp *(kW)*	33.98 *(25.34)*	33.00 *(24.61)*	30.96 *(23.09)*	27.75 *(20.69)*	23.79 *(17.74)*	19.84 *(14.80)*
Speed—Mph *(km/h)*	3.96 *(6.38)*	3.49 *(5.61)*	3.06 *(4.92)*	2.66 *(4.28)*	2.26 *(3.64)*	1.90 *(3.06)*
Slip %	9.53	11.06	12.58	13.37	13.76	13.66

TRACTOR SOUND LEVEL WITHOUT CAB	**Front Wheel Drive Engaged dB(A)**	**Front Wheel Drive Disengaged dB(A)**
Maximum Available Power—Two Hours	94.0	93.5
75% of Pull at Maximum Power—Ten Hours		94.0
50% of Pull at Maximum Power—Two Hours		93.5
50% of Pull at Reduced Engine Speed—Two Hours		90.5
Bystander in 8th (H4) gear		84.0

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F *(°C)* Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 5th (H1) Gear											
32.70 *(24.39)*	2962 *(13.17)*	4.14 *(6.66)*	2600	7.41	2.495 *(9.445)*	0.532 *(0.324)*	13.11 *(2.582)*	192 *(88.6)*	58 *(14.4)*	74 *(23.3)*	28.66 *(96.78)*
MAXIMUM POWER IN SELECTED GEARS											
27.68 *(20.64)*	5166 *(22.98)*	2.01 *(3.23)*	2668	15.00	3rd (L3) Gear			184 *(84.2)*	46 *(7.8)*	53 *(11.7)*	28.78 *(97.19)*
33.85 *(25.24)*	3073 *(13.67)*	4.13 *(6.65)*	2599	7.61	5th (H1) Gear			186 *(85.6)*	57 *(13.9)*	67 *(19.4)*	28.74 *(97.05)*
33.64 *(25.09)*	2224 *(9.89)*	5.67 *(9.13)*	2601	5.52	6th (H2) Gear			186 *(85.6)*	55 *(12.8)*	64 *(17.8)*	28.75 *(97.08)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Two 14.9-28; 6; 14 *(95)*	Two 14.9-28; 6; 14 *(95)*
Ballast	—Liquid (each)	350 lb *(159 kg)*	None
	—Cast Iron (each)	378 lb *(171 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 9.5-20; 6; 32 *(220)*	Two 9.5-20; 6; 32 *(220)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	192 lb *(87 kg)*	None
Height of Drawbar		16.5 in *(420 mm)*	16.5 in *(420 mm)*
Static Weight with Operator	—Rear	4230 lb *(1919 kg)*	2775 lb *(1259 kg)*
	—Front	2135 lb *(968 kg)*	1750 lb *(794 kg)*
	—Total	6365 lb *(2887 kg)*	4525 lb *(2053 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2475	*(17060)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	193	*(89)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	1		*not measured
LOAD lbs *(kg)*	2654	*(1204)*	
TIME sec	2.37		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	10.3	*(262)*	
Top of timed range	32.3	*(820)*	
Highest position	32.7	*(831)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	9.8	*(249)*	
Top of timed range	33.6	*(852)*	
Highest position	34.3	*(871)*	

*Implement load capacity for transport purposes not specified by manufacturer.

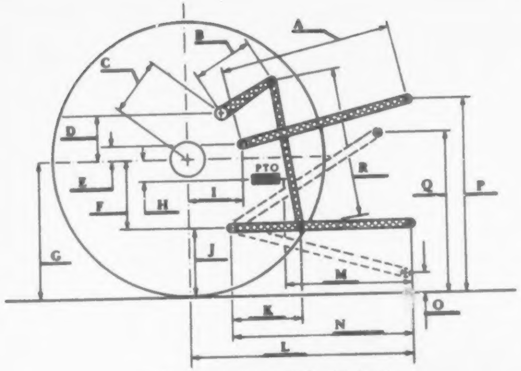
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 126°F *(52.2°C)*. Five gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1556**, June 14, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	23.3	*591*
B	9.5	*240*
C	11.6	*294*
D	11.0	*279*
E	10.6	*269*
F	7.1	*180*
G	24.3	*617*
H	0.5	*13*
I	11.9	*301*
J	17.2	*437*
K	14.6	*370*
L	35.2	*894*
M	20.3	*517*
N	31.1	*790*
O	8.0	*203*
P	35.3	*895*
Q	32.4	*823*
R	19.6	*498*

Kubota L4150 4WD Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1557—KUBOTA M8950DT DIESEL
ALSO KUBOTA M8950 DIESEL
24 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed —1005 rpm)									
	85.63 *(63.85)*	2400	5.282 *(19.994)*	0.430 *(0.262)*	16.21 *(3.194)*	191 *(88.6)*	56 *(13.2)*	75 *(23.8)*	28.93 *(97.68)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	74.22 *(55.35)*	2445	4.766 *(18.042)*	0.448 *(0.272)*	15.57 *(3.068)*	186 *(85.6)*	56 *(13.3)*	75 *(23.6)*	......
	0.00 *(0.00)*	2552	1.570 *(5.944)*	......	......	179 *(81.4)*	55 *(12.8)*	75 *(23.6)*	......
	38.03 *(28.36)*	2508	3.157 *(11.952)*	0.579 *(0.352)*	12.04 *(2.372)*	182 *(83.1)*	56 *(13.3)*	75 *(23.9)*	......
	84.82 *(63.25)*	2401	5.287 *(20.013)*	0.435 *(0.264)*	16.04 *(3.160)*	192 *(88.9)*	57 *(13.9)*	77 *(25.0)*	......
	19.17 *(14.29)*	2530	2.383 *(9.021)*	0.867 *(0.527)*	8.04 *(1.585)*	180 *(82.2)*	55 *(12.8)*	74 *(23.3)*	......
	56.38 *(42.04)*	2479	3.949 *(14.948)*	0.489 *(0.297)*	14.28 *(2.812)*	183 *(83.9)*	56 *(13.3)*	76 *(24.2)*	......
Av *Av*	**45.43** *(33.88)*	**2486**	**3.519** *(13.320)*	**0.540** *(0.329)*	**12.91** *(2.544)*	**184** *(84.2)*	**56** *(13.2)*	**75** *(23.9)*	**28.92** *(97.6.)*

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 15th (B-4-L) Gear											
67.44 *(50.29)*	5561 *(24.73)*	4.55 *(7.32)*	2400	9.60	5.205 *(19.703)*	0.538 *(0.327)*	12.96 *(2.553)*	187 *(85.8)*	53 *(11.4)*	65 *(18.1)*	28.65 *(96.75)*
75% of Pull at Maximum Power — Ten Hours 15th (B-4-L) Gear											
55.06 *(41.06)*	4251 *(18.91)*	4.86 *(7.82)*	2471	6.32	4.449 *(16.843)*	0.564 *(0.343)*	12.37 *(2.438)*	185 *(84.8)*	42 *(5.6)*	46 *(7.6)*	28.39 *(95.88)*
50% of Pull at Maximum Power — Two Hours 15th (B-4-L) Gear											
38.04 *(28.37)*	2834 *(12.61)*	5.03 *(8.10)*	2505	4.24	3.671 *(13.895)*	0.673 *(0.409)*	10.36 *(2.042)*	183 *(83.9)*	39 *(3.6)*	44 *(6.7)*	28.56 *(96.44)*
50% of Pull at Reduced Engine Speed — Two Hours 19th (C-2-L) Gear											
38.04 *(28.36)*	2834 *(12.60)*	5.03 *(8.10)*	1583	4.13	2.638 *(9.987)*	0.484 *(0.294)*	14.42 *(2.840)*	183 *(83.6)*	39 *(3.9)*	48 *(8.9)*	28.55 *(96.41)*
MAXIMUM POWER IN SELECTED GEARS											
53.69 *(40.03)*	7974 *(35.47)*	2.52 *(4.06)*	2459	14.85	11th (B-2-L) Gear			184 *(84.4)*	39 *(3.9)*	45 *(7.2)*	28.54 *(96.38)*
66.25 *(49.40)*	7855 *(34.94)*	3.16 *(5.09)*	2400	14.26	12th (B-3-L) Gear			186 *(85.3)*	40 *(4.4)*	46 *(7.8)*	28.54 *(96.38)*
66.22 *(49.38)*	7326 *(32.59)*	3.39 *(5.46)*	2399	12.38	13th (B-2-H) Gear			186 *(85.3)*	40 *(4.4)*	46 *(7.8)*	28.54 *(96.38)*
68.12 *(50.79)*	5712 *(25.41)*	4.47 *(7.20)*	2399	9.30	14th (B-3-H) Gear			186 *(85.3)*	47 *(8.3)*	57 *(13.9)*	28.77 *(97.15)*
69.08 *(51.51)*	5668 *(25.21)*	4.57 *(7.36)*	2400	9.17	15th (B-4-L) Gear			186 *(85.3)*	52 *(11.1)*	63 *(17.2)*	28.70 *(96.92)*
70.97 *(52.92)*	4907 *(21.83)*	5.42 *(8.73)*	2399	7.67	16th (C-1-L) Gear			186 *(85.3)*	50 *(10.0)*	61 *(16.1)*	28.74 *(97.05)*
68.70 *(51.23)*	4076 *(18.13)*	6.32 *(10.17)*	2401	6.06	17th (B-4-H) Gear			185 *(85.0)*	49 *(9.4)*	59 *(15.0)*	28.77 *(97.15)*
69.86 *(52.10)*	3523 *(15.67)*	7.44 *(11.97)*	2397	5.34	18th (C-1-H) Gear			185 *(85.0)*	49 *(9.4)*	59 *(15.0)*	28.76 *(97.12)*
71.13 *(53.04)*	3541 *(15.75)*	7.53 *(12.12)*	2398	5.20	19th (C-2-L) Gear			185 *(85.0)*	50 *(10.0)*	60 *(15.6)*	28.75 *(97.08)*
68.27 *(50.91)*	2628 *(11.69)*	9.74 *(15.68)*	2399	3.87	20th (C-3-L) Gear			186 *(85.3)*	50 *(10.0)*	60 *(15.6)*	28.74 *(97.05)*

Department of Agricultural Engineering

Dates of Test: March 26 to April 8, 1985

Manufacturer: KUBOTA, LTD., 2-47 Shikitsu-higashi, 1-chome, Naniwa-ku, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F *(15/15°C)*** 0.8376 **Fuel weight** 6.974 lbs/gal *(0.836 kg/l)* **Oil SAE** 20W **API service classification** CC, CD, SE **To motor** 3.427 gal *(12.971 l)* **Drained from motor** 2.765 gal *(10.467 l)* **Transmission and hydraulic lubricant** Shell Donax TD or equivalent **Front axle lubricant** SAE 80/90 gear oil **Total time engine was operated** 44.5 hours.

ENGINE: Make Kubota Diesel **Type** four cylinder vertical with turbocharger **Serial No.** V4300-TA-32599 **Crankshaft** lengthwise **Rated rpm** 2400 **Bore and stroke** 4.29" × 4.53" *(109 mm × 115 mm)* **Compression ratio** 17 to 1 **Displacement** 262 cu in *(4292 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** U50425 **Tread width** rear 59.8" *(1520 mm)* to 79.5" *(2020 mm)* front 60.6" *(1540 mm)* to 68.5" *(1740 mm)* **Wheel base** 97.2" *(2470 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 35.2" *(895 mm)* Vertical distance above roadway 46.7" *(1185 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled power-shift **Advertised speeds mph *(km/h)*** first 0.7 *(1.1)* second 0.9 *(1.4)* third 0.9 *(1.5)* fourth 1.2 *(1.9)* fifth 1.2 *(1.9)* sixth 1.5 *(2.5)* seventh 1.6 *(2.5)* eighth 2.1 *(3.4)* ninth 2.1 *(3.4)* tenth 2.9 *(4.6)* eleventh 2.9 *(4.7)* twelfth 3.7 *(5.9)* thirteenth 3.9 *(6.2)* fourteenth 4.9 *(7.9)* fifteenth 5.0 *(8.1)* sixteenth 5.9 *(9.5)* seventeenth 6.7 *(10.8)* eighteenth 7.9 *(12.6)* nineteenth 8.0 *(12.8)* twentieth 10.1 *(16.3)* twenty-first 10.6 *(17.1)* twenty-second 13.6 *(21.8)* twenty-third 13.8 *(22.3)* twenty-fourth 18.5 *(29.8)* reverse 2.2 *(3.5)*, 2.9 *(4.7)*, 3.0 *(4.8)*, 3.8 *(6.1)*, 4.0 *(6.4)*, 5.1 *(8.2)*, 5.2 *(8.3)*, 6.9 *(11.1)*. **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake ap-

LUGGING ABILITY IN 15th (B-4-L) GEAR

Crankshaft Speed rpm	2400	2163	1913	1682	1440	1188
Pull—lbs *(kN)*	5668 *(25.21)*	6197 *(27.57)*	6786 *(30.19)*	7048 *(31.35)*	7244 *(32.[illegible])*	7051 *(31.36)*
Increase in Pull %	0	9	20	24	28	24
Power—Hp *(kW)*	69.08 *(51.51)*	67.08 *(50.02)*	63.74 *(47.53)*	57.54 *(42.91)*	50.02 *(37.30)*	40.43 *(30.15)*
Speed—Mph *(km/h)*	4.57 *(7.36)*	4.06 *(6.53)*	3.52 *(5.67)*	3.06 *(4.93)*	2.59 *(4.17)*	2.15 *(3.46)*
Slip %	9.17	10.48	12.26	13.12	14.20	15.73

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	79.5	78.0
75% of Pull at Maximum Power—Ten Hours		79.5
50% of Pull at Maximum Power—Two Hours		79.0
50% of Pull at Reduced Engine Speed—Two Hours		75.5
Bystander in 24th (C-4-H) gear		86.5

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft Speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cooling med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 15th (B-4-L) Gear											
68.92 *(51.39)*	5452 *(24.25)*	4.74 *(7.63)*	2400	6.65	5.219 *(19.758)*	0.528 *(0.321)*	13.20 *(2.601)*	187 *(86.1)*	54 *(11.9)*	67 *(19.2)*	28.57 *(96.48)*

MAXIMUM POWER IN SELECTED GEARS

52.12 *(38.86)*	10364 *(46.10)*	1.89 *(3.03)*	2465	14.73	9th (B-1-L) Gear			184 *(84.4)*	39 *(3.9)*	45 *(7.2)*	28.54 *(96.38)*
68.29 *(50.93)*	5514 *(24.53)*	4.64 *(7.47)*	2400	6.62	14th (B-3-H) Gear			186 *(85.3)*	48 *(8.9)*	58 *(14.4)*	28.77 *(97.15)*
70.35 *(52.46)*	5562 *(24.74)*	4.74 *(7.63)*	2400	6.54	15th (B-4-L) Gea.			188 *(86.4)*	53 *(11.7)*	66 *(18.9)*	28.55 *(96.41)*
70.89 *(52.86)*	4748 *(21.12)*	5.60 *(9.01)*	2399	5.54	16th (C-1-L) Gear			186 *(85.3)*	51 *(10.6)*	62 *(16.2)*	28.73 *(97.02)*

TIRES, BALLAST A:.D WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 18.4-34, 6, 16 *(110)*	Two 18.4-34, 6, 16 *(110)*
Ballast	—Liquid (each)	780 lb *(354 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 12.4-24, 8, 32 *(220)*	Two 12.4-24, 8, 32 *(220)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	490 lb *(222 kg)*	None
Height of Drawbar		22 in *(560 mm)*	22 in *(560 mm)*
Static Weight with Operator	—Rear	7820 lb *(3547 kg)*	6260 lb *(2839 kg)*
	—Front	4450 lb *(2018 kg)*	3470 lb *(1574 kg)*
	—Total	12270 lb *(5565 kg)*	9730 lb *(4413 kg)*

plied) right 146" *(3.7 m)* left 146" *(3.7 m)*(on concrete surface without brake) right 177" *(4.5 m)* left 177" *(4.5 m)* **Turning space diameter** (on concrete surface with brake applied) right 307" *(7.8 m)* left 307" *(7.8 m)*(on concrete surface without brake) right 370 " *(9.4 m)* left 370" *(9.4 m)* **Power take-off** 540 rpm at 2035 engine rpm and 1005 rpm at 2400 engine rpm **Unladen tractor mass** 9555 lb *(4334 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 149°F *(64.9°C)*. Ten gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1557,** June 12, 1985.

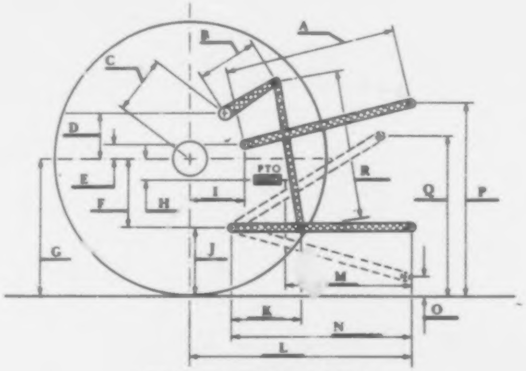
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2550	*(17580)*	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	164	*(73)*	
Location	filter inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	4478	*(2031)*	
TIME sec	1.74		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	13.2	*(335)*	
Top of timed range	35.2	*(894)*	
Highest position	** 36.1	*(917)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	12.9	*(328)*	
Top of timed range	35.6	*(904)*	
Highest position	36.6	*(930)*	

*Implement load capacity for transport purposes not specified by manufacturer.
** The observed power range, 22.9 in. *(582 mm)* is less than the minimum power range for Cat II, 24 in. *(610 mm)* specified by ASAE Standard S217.10



	inch	mm
A	30.3	*770*
B	9.8	*250*
C	12.2	*311*
D	11.9	*303*
E	11.2	*286*
F	6.9	*176*
G	30.3	*770*
H	0.8	*21*
I	10.8	*273*
J	23.4	*594*
K	20.9	*530*
L	40.0	*1015*
M	23.4	*594*
N	35.4	*900*
O	8.0	*203*
P	42.4	*1077*
Q	33.4	*848*
R	27.9	*709*

Hitch Dimensions as Tested — No Load

Kubota M8950DT Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1552—MASSEY FERGUSON 1020 DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—588 rpm)								
17.08 *(12.73)*	2353	1.377 *(5.213)*	0.562 *(0.342)*	12.40 *(2.443)*	202 *(94.4)*	57 *(13.6)*	75 *(23.8)*	28.81 *(97.27)*
Standard Power Take-off Speed (540 rpm) — One Hour								
16.24 *(12.11)*	2162	1.296 *(4.907)*	0.557 *(0.339)*	12.53 *(2.468)*	204 *(95.6)*	57 *(13.9)*	75 *(23.9)*	28.78 *(97.19)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
15.09 *(11.25)*	2445	1.174 *(4.445)*	0.543 *(0.330)*	12.85 *(2.531)*	188 *(86.4)*	57 *(13.6)*	75 *(23.9)*	
0.00 *(0.00)*	2539	0.413 *(1.563)*			161 *(71.7)*	56 *(13.3)*	76 *(24.2)*	
7.56 *(5.64)*	2453	0.736 *(2.785)*	0.679 *(0.413)*	10.27 *(2.024)*	166 *(74.4)*	56 *(13.3)*	75 *(23.9)*	
17.34 *(12.93)*	2350	1.420 *(5.374)*	0.571 *(0.347)*	12.22 *(2.406)*	200 *(93.3)*	56 *(13.3)*	75 *(23.9)*	
3.85 *(2.87)*	2500	0.585 *(2.215)*	1.059 *(0.644)*	6.59 *(1.298)*	161 *(71.7)*	56 *(13.3)*	75 *(23.6)*	
11.30 *(8.43)*	2441	0.921 *(3.485)*	0.568 *(0.346)*	12.28 *(2.418)*	168 *(75.6)*	57 *(13.6)*	75 *(23.6)*	
Av 9.19 **Av *(6.85)***	**2454**	**0.875** ***(3.311)***	**0.664** ***(0.404)***	**10.51** ***(2.070)***	**174** ***(78.8)***	**56** ***(13.6)***	**75** ***(23.8)***	**28.77** ***(97.36)***

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 11th (H2) Gear											
14.33 *(10.68)*	1071 *(4.76)*	5.02 *(8.07)*	2350	7.87	1.383 *(5.235)*	0.673 *(0.409)*	10.36 *(2.041)*	185 *(84.7)*	49 *(9.4)*	61 *(16.1)*	28.84 *(97.39)*
75% of Pull at Maximum Power — Ten Hours 11th (H2) Gear											
11.32 *(8.44)*	808 *(3.59)*	5.25 *(8.45)*	2425	6.44	1.084 *(4.103)*	0.668 *(0.406)*	10.44 *(2.057)*	169 *(76.1)*	48 *(8.7)*	61 *(15.8)*	29.03 *(98.02)*
50% of Pull at Maximum Power — Two Hours 11th (H2) Gear											
7.92 *(5.90)*	545 *(2.42)*	5.45 *(8.77)*	2455	4.13	0.843 *(3.192)*	0.743 *(0.452)*	9.39 *(1.850)*	162 *(72.2)*	47 *(8.1)*	54 *(12.2)*	29.02 *(98.00)*
50% of Pull at Reduced Engine Speed — Two Hours 12th (H3) Gear											
7.90 *(5.89)*	544 *(2.42)*	5.45 *(8.77)*	1666	4.07	0.705 *(2.668)*	0.622 *(0.378)*	11.22 *(2.210)*	168 *(75.3)*	50 *(9.7)*	60 *(15.3)*	28.99 *(97.89)*

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
13.94 *(10.39)*	1771 *(7.88)*	2.95 *(4.75)*	2392	15.00	9th (L3) Gear	176 *(79.7)*	50 *(10.0)*	62 *(16.7)*	28.92 *(97.66)*
14.00 *(10.44)*	1640 *(7.30)*	3.20 *(5.15)*	2349	13.34	10th (H1) Gear	187 *(85.8)*	50 *(10.0)*	62 *(16.7)*	28.89 *(97.56)*
14.59 *(10.88)*	1093 *(4.86)*	5.01 *(8.06)*	2350	8.08	11th (H2) Gear	183 *(83.9)*	50 *(10.0)*	62 *(16.7)*	28.86 *(97.46)*
14.45 *(10.78)*	715 *(3.18)*	7.58 *(12.20)*	2349	3.35	12th (H3) Gear	185 *(84.7)*	50 *(10.0)*	62 *(16.7)*	28.88 *(97.52)*

LUGGING ABILITY IN 11th (H2) GEAR

Crankshaft Speed rpm	2350	2115	1881	1648	1413	1177
Pull—lbs *(kN)*	1093 *(4.86)*	1079 *(4.80)*	1114 *(4.96)*	1144 *(5.09)*	1107 *(4.92)*	997 *(4.43)*
Increase in Pull %	0	−1	2	5	1	−9
Power—Hp *(kW)*	14.59 *(10.88)*	12.95 *(9.66)*	11.85 *(8.84)*	10.67 *(7.95)*	8.88 *(6.62)*	6.72 *(5.01)*
Speed—Mph *(km/h)*	5.01 *(8.06)*	4.50 *(7.25)*	3.99 *(6.42)*	3.50 *(5.63)*	3.01 *(4.84)*	2.53 *(4.07)*
Slip %	8.08	8.08	8.41	8.49	8.16	7.24

Department of Agricultural Engineering

Dates of Test: March 13 - 22, 1985

Manufacturer: TOYOSHA COMPANY, LTD., 55 Joshop-16, Kadoma City, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F *(15/15°C)*** 0.8376 **Fuel weight** 6.974 lbs/gal *(0.836 kg/l)* **Oil SAE** 30 **API service classification** SE, SF, CC **To motor** 0.984 gal *(3.726 l)* **Drained from motor** 0.763 gal *(2.889 l)* **Transmission and final drive lubricant** Massey Ferguson Permatran III fluid **Total time engine was operated** 49.5 hours

ENGINE: Make Toyosha Diesel **Type** three cylinder vertical **Serial No.** CS112M00858 **Crankshaft** lengthwise **Rated rpm** 2350 **Bore and stroke** 2.953" × 3.347" *(75 mm × 85 mm)* **Compression ratio** 23 to 1 **Displacement** 68.7 cu in *(1126 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element **Oil filter** one full flow cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 40386 **Tread width** rear 37.0" *(940 mm)* to 41.7" *(1060 mm)* front 38.0" *(965 mm)* **Wheel base** 56.7" *(1440 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center- line of rear wheels 26.0" *(660 mm)* Vertical distance above roadway 25.0" *(635 mm)* Horizontal distance from center of rear wheel tread 0.1" *(2 mm)* to the left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 0.3 *(0.5)* second 0.4 *(0.7)* third 0.6 *(1.0)* fourth 0.7 *(1.1)* fifth 1.0 *(1.6)* sixth 1.4 *(2.3)* seventh 1.6 *(2.6)* eighth 2.3 *(3.8)* ninth 3.5 *(5.6)* tenth 3.7 *(6.0)* eleventh 5.5 *(8.9)* twelfth 8.1 *(13.0)* reverse 0.6 *(0.9)*, 1.4 *(2.2)*, 3.4 *(5.4)*, 7.9 *(12.7)* **Clutch** single dry disc operated by foot pedal **Brakes** drum and shoe operated by two foot pedals which can be locked together **Steering** mechanical **Turning radius** (on concrete surface with brake applied) right 89.0" *(2.26 m)* left 89.0" *(2.26 m)* (on concrete surface without brake) right 99.2" *(2.52 m)* left 99.2" *(2.52 m)* **Turning space diameter** (on concrete surface with brake applied) right 194" *(4.92 m)* left 194" *(4.92 m)* (on concrete surface without brake) right 214" *(5.44 m)* left 214" *(5.44 m)* **Power take-off** 540 rpm at 2162 engine rpm **Unladen tractor mass** 2050 lb *(930 kg)*.

REPAIRS AND ADJUSTMENTS: The air filter was replaced during preliminary PTO tests.

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	91.0	89.5
75% of Pull at Maximum Power—Ten Hours		89.5
50% of Pull at Maximum Power—Two Hours		89.0
50% of Pull at Reduced Engine Speed—Two Hours		87.5
Bystander in 12th (H3) gear		75.5

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 11th (H2) Gear											
14.59 *(10.88)*	1055 *(4.69)*	5.19 *(8.35)*	2349	5.71	1.389 *(5.260)*	0.664 *(0.404)*	10.50 *(2.069)*	181 *(82.5)*	47 *(8.1)*	56 *(13.1)*	28.84 *(97.37)*

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
12.27 *(9.15)*	2237 *(9.95)*	2.06 *(3.31)*	2418	14.77	8th (L2) Gear	173 *(78.1)*	50 *(10.0)*	62 *(16.7)*	28.94 *(97.73)*
14.77 *(11.02)*	1068 *(4.75)*	5.19 *(8.35)*	2550	5.80	11th (H2) Gear	182 *(83.3)*	47 *(8.3)*	57 *(13.9)*	28.83 *(97.35)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 8.3-24, 4, 22 *(150)*	Two 8.3-24, 4, 22 *(150)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	325 lb *(148 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 6-14, 4, 28 *(195)*	Two 6-14, 4, 28 *(195)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	25 lb *(11 kg)*	None
Height of Drawbar		12.5 in *(320 mm)*	12.5 in *(320 mm)*
Static Weight with Operator	—Rear	1940 lb *(880 kg)*	1290 lb *(585 kg)*
	—Front	990 lb *(449 kg)*	940 lb *(426 kg)*
	—Total	2930 lb *(1329 kg)*	2230 lb *(1011 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2050	*(14130)*	
Location	lift cylinder		
Hydraulic oil temperature °F (°C)	154	*(68)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs *(kg)*	1544	*(700)*	
TIME sec	30		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	8.0	*(203)*	
Top of timed range	30.1	*(765)*	
Highest position	** 30.3	*(768)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	8.6	*(219)*	
Top of timed range	30.6	*(776)*	
Highest position	30.8	*(783)*	

*Implement load capacity for transport purposes not specified by manufacturer.

**The observed highest position, 30.3 in. *(768 mm)* is less than the minimum height for highest position for Cat I, 32 in. *(813 mm)* specified by ASAE Standard S217.10.

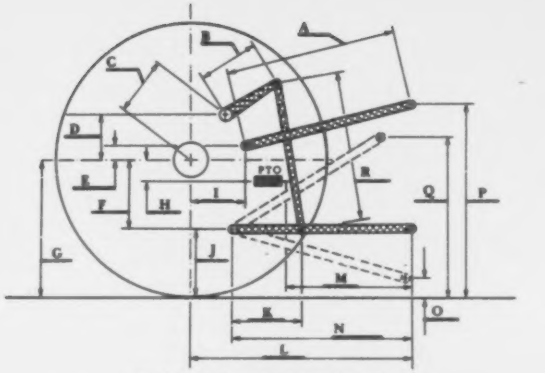
The relief valve pressure was adjusted during the hitch test.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 140°F *(60.1°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1552, June 13, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	21.3	*540*
B	10.6	*270*
C	14.7	*372*
D	14.4	*366*
E	15.2	*386*
F	4.5	*114*
G	18.5	*470*
H	2.8	*71*
I	8.8	*222*
J	14.0	*356*
K	13.8	*350*
L	30.1	*764*
M	20.4	*518*
N	25.6	*650*
O	6.3	*159*
P	32.0	*813*
Q	30.3	*768*
R	20.1	*511*

Massey Ferguson 1020 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1553—MASSEY FERGUSON 1030 DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			
			gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed —580 rpm)									
	23.35 *(17.41)*	2500	1.824 *(6.904)*	0.545 *(0.331)*	12.80 *(2.522)*	195 *(90.3)*	58 *(14.5)*	75 *(23.8)*	29.02 *(97.98)*
Standard Power Take-off Speed (540 rpm) — One Hour									
	22.80 *(17.00)*	2327	1.758 *(6.655)*	0.538 *(0.327)*	12.97 *(2.555)*	195 *(90.7)*	58 *(14.4)*	75 *(23.9)*	29.00 *(97.91)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
	20.54 *(15.32)*	2587	1.626 *(6.155)*	0.552 *(0.336)*	12.63 *(2.488)*	184 *(84.2)*	58 *(14.4)*	75 *(23.9)*	— —
	0.00 *(0.00)*	2676	0.619 *(2.343)*	— —	— —	166 *(74.2)*	58 *(14.4)*	75 *(23.6)*	— —
	10.40 *(7.75)*	2622	1.063 *(4.022)*	0.715 *(0.434)*	9.79 *(1.928)*	167 *(75.0)*	58 *(14.4)*	75 *(23.9)*	— —
	23.49 *(17.51)*	2501	1.837 *(6.953)*	0.545 *(0.332)*	12.79 *(2.519)*	194 *(89.7)*	58 *(14.4)*	75 *(23.9)*	— —
	5.24 *(3.91)*	2645	0.839 *(3.175)*	1.116 *(0.679)*	6.25 *(1.231)*	166 *(74.4)*	58 *(14.4)*	75 *(23.9)*	— —
	15.44 *(11.51)*	2595	1.303 *(4.934)*	0.589 *(0.358)*	11.85 *(2.334)*	170 *(76.4)*	58 *(14.4)*	75 *(23.9)*	— —
Av ***Av***	**12.52** ***(9.33)***	**2604**	**1.215** ***(4.597)***	**0.677** ***(0.412)***	**10.31** ***(2.030)***	**174** ***(79.0)***	**58** ***(14.4)***	**75** ***(23.8)***	**28.96** ***(97.79)***

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			
					gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 10th (H2) Gear											
18.29 *(13.64)*	1202 *(5.35)*	5.71 *(9.18)*	2501	7.33	1.821 *(6.893)*	0.694 *(0.422)*	10.04 *(1.979)*	191 *(88.3)*	60 *(15.5)*	71 *(21.4)*	28.61 *(96.59)*
75% of Pull at Maximum Power — Ten Hours 10th (H2) Gear											
14.68 *(10.94)*	920 *(4.09)*	5.98 *(9.63)*	2570	5.47	1.494 *(5.656)*	0.710 *(0.432)*	9.82 *(1.935)*	170 *(76.5)*	48 *(9.1)*	56 *(13.2)*	28.54 *(96.38)*
50% of Pull at Maximum Power — Two Hours 10th (H2) Gear											
10.06 *(7.50)*	614 *(2.73)*	6.14 *(9.88)*	2594	3.89	1.211 *(4.584)*	0.840 *(0.511)*	8.30 *(1.636)*	168 *(75.3)*	46 *(7.8)*	57 *(13.9)*	28.44 *(96.04)*
50% of Pull at Reduced Engine Speed — Two Hours 11th (H3) Gear											
10.03 *(7.48)*	613 *(2.73)*	6.14 *(9.88)*	1821	3.74	0.948 *(3.588)*	0.659 *(0.401)*	10.59 *(2.085)*	167 *(75.0)*	49 *(9.4)*	64 *(17.8)*	28.49 *(96.19)*
MAXIMUM POWER IN SELECTED GEARS											
17.44 *(13.01)*	2277 *(10.13)*	2.87 *(4.62)*	2497	14.63	8th (M4) Gear			169 *(76.1)*	45 *(7.2)*	47 *(8.3)*	28.40 *(95.90)*
18.30 *(13.65)*	1781 *(7.92)*	3.85 *(6.20)*	2501	11.74	9th (H1) Gear			190 *(87.5)*	58 *(14.4)*	69 *(20.6)*	28.64 *(96.71)*
18.66 *(13.91)*	1227 *(5.46)*	5.70 *(9.18)*	2502	7.45	10th (H2) Gear			189 *(86.9)*	58 *(14.4)*	69 *(20.6)*	28.64 *(96.71)*
17.51 *(13.06)*	788 *(3.51)*	8.33 *(13.41)*	2501	4.78	11th (H3) Gear			191 *(88.1)*	61 *(16.1)*	73 *(22.8)*	28.62 *(96.65)*

LUGGING ABILITY IN 10th (H2) GEAR

Crankshaft Speed rpm	2502	2247	1994	1755	1498	1243
Pull—lbs *(kN)*	1227 *(5.46)*	1330 *(5.92)*	1384 *(6.16)*	1449 *(6.45)*	1485 *(6.61)*	1470 *(6.54)*
Increase in Pull %	0	8	13	18	21	20
Power—Hp *(kW)*	18.66 *(13.91)*	18.01 *(13.43)*	16.53 *(12.33)*	15.14 *(11.29)*	13.24 *(9.88)*	10.88 *(8.11)*
Speed—Mph *(km/h)*	5.70 *(9.18)*	5.08 *(8.17)*	4.48 *(7.21)*	3.92 *(6.31)*	3.34 *(5.38)*	2.78 *(4.47)*
Slip %	7.45	8.14	8.86	9.40	9.40	9.51

Department of Agricultural Engineering

Dates of Test: March 18 - 28, 1985

Manufacturer: TOYOSHA COMPANY, LTD. 55 Joshoji-16, Kadoma City, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8376 **Fuel weight** 6.974 lbs/gal *(0.836 kg/l)* **Oil SAE** 30 **API service classification** SE, SF, CC **To motor** 0.956 gal *(3.619 l)* **Drained from motor** 0.777 gal *(2.943 l)* **Transmission and final drive lubricant** Massey Ferguson Permatran III fluid **Total time engine was operated** 49.5 hours.

ENGINE: Make Toyosha Diesel **Type** three cylinder vertical **Serial No.** MS142M00758 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.228" × 3.543" *(82 mm × 90 mm)* **Compression ratio** 23 to 1 **Displacement** 87 cu in *(1425 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** radiator for power steering fluid **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 40384 **Tread width** rear 41.1" *(1045 mm)* to 62.6" *(1590 mm)* front 38.0" *(965 mm)* **Wheel base** 61.4" *(1560 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 23.2" *(590 mm)* Vertical distance above roadway 25.7" *(653 mm)* Horizontal distance from center of rear wheel tread 0.3" *(7 mm)* to the left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 0.4 *(0.6)* second 0.6 *(0.9)* third 0.7 *(1.2)* fourth 1.0 *(1.7)* fifth 1.2 *(2.0)* sixth 1.7 *(2.8)* seventh 2.5 *(4.0)* eighth 3.4 *(5.4)* ninth 4.3 *(7.0)* tenth 6.2 *(9.9)* eleventh 8.7 *(14.0)* twelfth 11.9 *(19.2)* reverse 0.7 *(1.1)*, 2.4 *(3.9)*, 8.4 *(13.5)* **Clutch** single dry disc operated by foot pedal **Brakes** wet disc operated by two foot pedals that can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 94.1" *(2.39 m)* left 94.1" *(2.39 m)*(on concrete surface without brake) right 105.1" *(2.67 m)* left 105.1" *(2.67 m)* **Turning space diameter** (on concrete surface with brake applied) right 204.2" *(5.19 m)* left 204.2" *(5.19 m)*(on concrete surface without brake) right 226.2 " *(5.75 m)* left 226.2" *(5.75 m)* **Power take-off** 540 rpm at 2327 engine rpm **Unladen tractor mass** 2815 lb *(1277 kg)*.

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	92.0	91.0
75% of Pull at Maximum Power—Ten Hours		90.5
50% of Pull at Maximum Power—Two Hours		88.0
50% of Pull at Reduced Engine Speed—Two Hours		86.5
Bystander in 12th (H3) gear		77.0

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 10th (H2) Gear											
18.02 (13.44)	1144 (5.09)	5.91 (9.51)	2500	5.22	1.814 (6.866)	0.702 (0.427)	9.95 (1.957)	190 (87.5)	59 (14.7)	70 (20.8)	28.53 (96.34)
MAXIMUM POWER IN SELECTED GEARS											
16.33 (12.17)	2828 (12.58)	2.17 (3.48)	2541	14.79	7th (M3) Gear			169 (76.1)	43 (6.1)	44 (6.7)	28.36 (95.77)
18.49 (13.79)	1704 (7.58)	4.07 (6.55)	2501	7.96	9th (H1) Gear			188 (86.4)	58 (14.4)	68 (20.0)	28.65 (96.75)
18.31 (13.65)	1163 (5.17)	5.90 (9.50)	2499	5.24	10th (H2) Gear			188 (86.4)	58 (14.4)	69 (20.6)	28.54 (96.38)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 11.2-24; 4; 18 (125)	Two 11.2-24; 4; 18 (125)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	342 lb (155 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 6-14; 4; 28 (195)	Two 6-14; 4; 28 (195)
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	120 lb (55 kg)	None
Height of Drawbar		14 in (355 mm)	14 in (355 mm)
Static Weight with Operator	—Rear	2610 lb (1184 kg)	1925 lb (873 kg)
	—Front	1305 lb (592 kg)	1065 lb (483 kg)
	—Total	3915 lb (1776 kg)	2990 lb (1356 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2025	(13960)	
Location	lift cylinder		
Hydraulic oil temperature °F (°C)	134	(57)	
Location	pump inlet		

	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs (kg)	1734	(787)	
TIME sec	1.75		
HITCH POINT MOVEMENT in (mm)			
Lowest position	10.6	(268)	
Top of timed range	31.6	(802)	
Highest position	** 31.7	(804)	
LOAD CG MOVEMENT in (mm)			
Lowest position	11.4	(290)	
Top of timed range	28.2	(716)	
Highest position	28.3	(718)	

*Implement load capacity for transport purposes not specified by manufacturer.

**The observed power range, 21.1 in (536 mm) is less than the minimum power range for Cat I, 22 in (559 mm) specified by ASAE Standard S217.10.

**The observed highest position, 31.7 in (804 mm) is less than the minimum height for highest position for Cat I, 32 in (813 mm) specified by ASAE Standard S217.10.

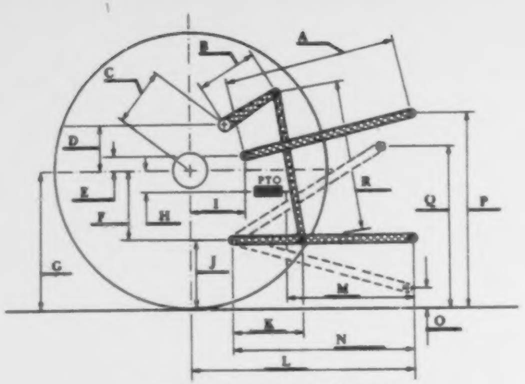
REPAIRS AND ADJUSTMENTS: The throttle lever friction disc was tightened during the preliminary PTO tests.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 137°F *(58.4°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No **1555**, June 13, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	23.9	*606*
B	10.6	*270*
C	15.5	*393*
D	15.2	*386*
E	16.1	*409*
F	5.3	*135*
G	20.6	*522*
H	1.8	*46*
I	8.1	*206*
J	15.3	*387*
K	15.4	*390*
L	32.2	*819*
M	21.8	*554*
N	25.6	*650*
O	7.8	*197*
P	33.3	*845*
Q	30.8	*781*
R	23.0	*584*

Massey Ferguson 1030 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1554—MASSEY FERGUSON 1040 DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —578 rpm)								
27.75 *(20.68)*	2500	2.164 *(8.193)*	0.544 *(0.331)*	12.81 *(2.524)*	186 *(85.7)*	58 *(14.3)*	75 *(23.9)*	28.94 *(97.73)*
Standard Power Take-off Speed (540 rpm) — One Hour								
25.80 *(19.24)*	2334	1.987 *(7.523)*	0.537 *(0.327)*	12.98 *(2.557)*	184 *(84.4)*	57 *(13.8)*	75 *(23.8)*	28.92 *(97.66)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
24.47 *(18.25)*	2596	2.005 *(7.588)*	0.571 *(0.347)*	12.21 *(2.405)*	180 *(82.2)*	57 *(13.6)*	75 *(23.6)*	—
0.00 *(0.00)*	2680	0.779 *(2.947)*	—	—	167 *(74.7)*	57 *(13.6)*	75 *(23.9)*	—
12.47 *(9.30)*	2643	1.338 *(5.064)*	0.748 *(0.455)*	9.32 *(1.836)*	170 *(76.4)*	57 *(13.9)*	75 *(23.9)*	—
28.27 *(21.08)*	2502	2.168 *(8.207)*	0.535 *(0.325)*	13.04 *(2.569)*	185 *(85.0)*	56 *(13.3)*	76 *(24.2)*	—
6.26 *(4.67)*	2653	1.058 *(4.006)*	1.178 *(0.717)*	5.92 *(1.166)*	168 *(75.3)*	56 *(13.3)*	75 *(23.9)*	—
18.48 *(13.78)*	2615	1.639 *(6.204)*	0.618 *(0.376)*	11.28 *(2.221)*	171 *(77.2)*	57 *(13.6)*	75 *(23.6)*	—
Av 14.99 **Av *(11.18)***	**2615**	**1.498** ***(5.669)***	**0.697** ***(0.424)***	**10.01** ***(1.972)***	**173** ***(78.5)***	**56** ***(13.6)***	**75** ***(23.8)***	**28.91** ***(97.62)***

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 10th (H2) Gear											
21.80 *(16.25)*	1483 *(6.60)*	5.51 *(8.87)*	2500	6.63	2.165 *(8.196)*	0.693 *(0.421)*	10.07 *(1.983)*	173 *(78.3)*	45 *(7.2)*	51 *(10.6)*	28.72 *(96.97)*
75% of Pull at Maximum Power — Ten Hours 10th (H2) Gear											
17.95 *(13.39)*	1150 *(5.12)*	5.85 *(9.42)*	2614	5.20	1.884 *(7.132)*	0.732 *(0.445)*	9.53 *(1.877)*	172 *(77.6)*	43 *(6.2)*	52 *(11.2)*	28.77 *(97.15)*
50% of Pull at Maximum Power — Two Hours 10th (H2) Gear											
12.26 *(9.14)*	768 *(3.41)*	5.99 *(9.64)*	2640	3.95	1.563 *(5.916)*	0.889 *(0.541)*	7.84 *(1.545)*	170 *(76.7)*	38 *(3.1)*	43 *(6.1)*	29.09 *(98.22)*
50% of Pull at Reduced Engine Speed — Two Hours 11th (H3) Gear											
12.25 *(9.14)*	767 *(3.41)*	5.99 *(9.65)*	1855	3.79	1.217 *(4.608)*	0.693 *(0.422)*	10.06 *(1.983)*	168 *(75.6)*	44 *(6.7)*	53 *(11.4)*	29.05 *(98.08)*
MAXIMUM POWER IN SELECTED GEARS											
21.17 *(15.79)*	2795 *(12.43)*	2.84 *(4.57)*	2575	14.68		8th (M4) Gear		174 *(78.6)*	48 *(8.9)*	60 *(15.6)*	28.96 *(97.79)*
22.32 *(16.64)*	2233 *(9.93)*	3.75 *(6.03)*	2501	10.42		9th (H1) Gear		173 *(78.1)*	44 *(6.7)*	49 *(9.4)*	28.74 *(97.03)*
22.57 *(16.83)*	1533 *(6.82)*	5.52 *(8.89)*	2502	6.53		10th (H2) Gear		173 *(78.3)*	43 *(6.1)*	48 *(8.9)*	28.76 *(97.12)*
21.43 *(15.98)*	1002 *(4.46)*	8.02 *(12.91)*	2500	4.33		11th (H3) Gear		173 *(78.3)*	44 *(6.7)*	50 *(10.0)*	28.73 *(97.02)*

LUGGING ABILITY IN 10th (H2) GEAR

Crankshaft Speed rpm	2502	2241	2001	1755	1506	1247	998
Pull—lbs *(kN)*	1533 *(6.82)*	1534 *(6.82)*	1614 *(7.18)*	1866 *(8.30)*	2041 *(9.08)*	2100 *(9.34)*	1978 *(8.80)*
Increase in Pull %	0	0	5	22	33	37	29
Power—Hp *(kW)*	22.57 *(16.83)*	20.23 *(15.08)*	18.94 *(14.12)*	18.95 *(14.13)*	17.59 *(13.12)*	14.90 *(11.11)*	11.32 *(8.44)*
Speed—Mph *(km/h)*	5.52 *(8.89)*	4.94 *(7.96)*	4.40 *(7.08)*	3.81 *(6.13)*	3.23 *(5.20)*	2.66 *(4.28)*	2.15 *(3.45)*
Slip %	6.53	6.63	6.84	8.14	9.22	9.70	9.03

Department of Agricultural Engineering

Dates of Test: March 14 - 26, 1985

Manufacturer: TOYOSHA COMPANY, LTD.,55 Joshoji-16, Kadoma City, Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8376 **Fuel weight** 6.974 lbs/gal *(0.836) kg/l)* **Oil SAE** 30 **API service classification** SE, SF, CC To motor 0.971 gal *(3.675 l)* **Drained from motor** 0.919 gal *(3.480 l)* **Transmission and final drive lubricant** Massey Ferguson Permatran III fluid **Total time engine was operated** 41.0 hours.

ENGINE: Make Toyosha Diesel **Type** three cylinder vertical **Serial No.** 3S200255 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 3.622" × 3.937" *(92 mm × 100 mm)* **Compression ratio** 23 to 1 **Displacement** 121.7 cu in *(1994 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element **Oil filter** one full flow cartridge **Fuel filter** one paper cartridge and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 40298 **Tread width** rear 45.3" *(1150 mm)* to 63.6" *(1615 mm)* front 47.2" *(1200 mm)* **Wheel base** 68.9" *(1750 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30.6" *(777 mm)* Vertical distance above roadway 28.1" *(715 mm)* Horizontal distance from center of rear wheel tread 0.1" *(2 mm)* to the left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 0.4 *(0.6)* second 0.5 *(0.8)* third 0.7 *(1.2)* fourth 1.0 *(1.6)* fifth 1.2 *(1.9)* sixth 1.7 *(2.7)* seventh 2.4 *(3.8)* eighth 3.3 *(5.3)* ninth 4.2 *(6.8)* tenth 6.0 *(9.6)* eleventh 8.5 *(13.6)* twelfth 11.6 *(18.6)* reverse 0.7 *(1.1)*, 2.3 *(3.7)*, 8.2 *(13.2)* **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 112" *(2.84 m)* left 112" *(2.84 m)*(on concrete surface without brake) right 125" *(3.18 m)* left 125" *(3.18 m)* **Turning space diameter** (on concrete surface with brake applied) right 232" *(5.89 m)* left 232" *(5.89 m)*(on concrete surface without brake) right 258" *(6.55 m)* left 258" *(6.55 m)* **Power take-off** 540 rpm at 2334 engine rpm **Unladen tractor mass** 3620 lb *(1642 kg)*.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	88.5	88.0
75% of Pull at Maximum Power—Ten Hours		90.0
50% of Pull at Maximum Power—Two Hours		89.5
50% of Pull at Reduced Engine Speed—Two Hours		88.0
Bystander in 12th (H4) gear		78.5

DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 10th (H2) Gear											
20.91 *(15.59)*	1364 *(6.07)*	5.75 *(9.25)*	2500	4.94	2.165 *(8.196)*	0.722 *(0.439)*	9.66 *(1.902)*	173 *(78.3)*	45 *(7.2)*	52 *(10.8)*	28.70 *(96.90)*
MAXIMUM POWER IN SELECTED GEARS											
19.93 *(14.86)*	3501 *(15.57)*	2.13 *(3.44)*	2585	14.78		7th (M3) Gear		173 *(78.3)*	47 *(8.3)*	58 *(14.4)*	29.01 *(97.96)*
22.11 *(16.49)*	2090 *(9.29)*	3.97 *(6.39)*	2501	7.48		9th (H1) Gear		172 *(77.8)*	44 *(6.7)*	49 *(9.4)*	28.74 *(97.05)*
21.65 *(16.15)*	1413 *(6.29)*	5.75 *(9.25)*	2501	4.94		10th (H2) Gear		173 *(78.3)*	43 *(6.1)*	48 *(8.9)*	28.77 *(97.15)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 13.6-24; 4; 14 *(195)*	Two 13.6-24; 4; 14 *(195)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	435 lb *(198 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 8-16; 4; 22 *(150)*	Two 8-16; 4; 22 *(150)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	22 lb *(10 kg)*	None
Height of Drawbar		15 in *(380 mm)*	15 in *(380 mm)*
Static Weight with Operator	—Rear	3060 lb *(1388 kg)*	2190 lb *(993 kg)*
	—Front	1655 lb *(751 kg)*	1610 lb *(730 kg)*
	—Total	4715 lb *(2139 kg)*	3800 lb *(1723 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	1875	*(12930)*	
Location	lift cylinder		
Hydraulic oil temperature °F (°C)	145	*(63)*	
Location	pump inlet		
	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs *(kg)*	1734	*(787)*	
TIME sec	1.88		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	11.0	*(279)*	
Top of timed range	32.0	*(813)*	
Highest position	** 32.0	*(813)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.9	*(302)*	
Top of timed range	30.3	*(770)*	
Highest position	30.9	*(784)*	

*Implement load capacity for transport purposes not specified by manufacturer.

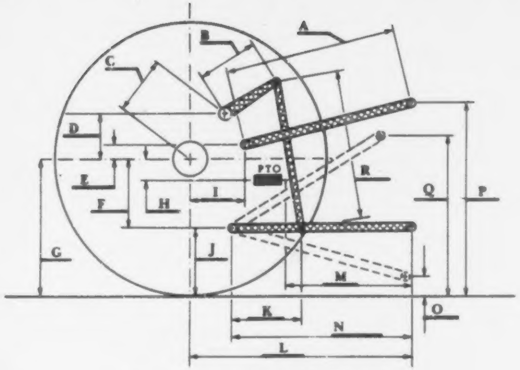
**The observed power range, 21 in *(534 mm)* is less than the minimum power range for Cat I, 22 in *(559 mm)* specified by ASAE Standard S217.10.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 146°F *(63.3°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No.1554, June 13, 1985.

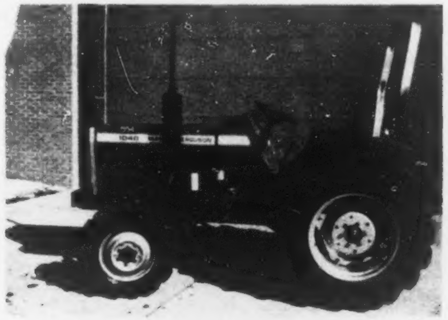
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	19.5	*495*
B	10.6	*270*
C	15.5	*393*
D	15.2	*386*
E	16.1	*409*
F	5.3	*135*
G	21.7	*551*
H	1.8	*47*
I	12.3	*312*
J	16.4	*417*
K	15.4	*390*
L	32.2	*819*
M	21.8	*554*
N	25.6	*650*
O	8.0	*203*
P	34.4	*874*
Q	30.8	*782*
R	23.0	*584*



Massey Ferguson 1040 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1542—STEIGER BEARCAT IV KM-225 DIESEL
20 SPEED

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 10th (3B) Gear											
188.03 *(140.21)*	13209 *(58.75)*	5.34 *(8.59)*	2098	3.41	11.444 *(43.321)*	0.424 *(0.258)*	16.43 *(3.237)*	183 *(83.9)*	44 *(6.7)*	45 *(7.2)*	28.51 *(96.26)*
75% of Pull at Maximum Power — Ten Hours 10th (3B) Gear											
152.15 *(113.46)*	10106 *(44.95)*	5.65 *(9.09)*	2198	2.34	9.956 *(37.686)*	0.456 *(0.278)*	15.28 *(3.011)*	182 *(83.6)*	54 *(12.3)*	58 *(14.2)*	28.45 *(96.06)*
50% of Pull at Maximum Power — Two Hours 10th (3B) Gear											
103.08 *(76.87)*	6692 *(29.77)*	5.78 *(9.30)*	2236	1.88	7.859 *(29.749)*	0.532 *(0.323)*	13.12 *(2.584)*	181 *(82.5)*	42 *(5.6)*	43 *(6.1)*	28.47 *(96.14)*
50% of Pull at Reduced Engine Speed — Two Hours 14th (4B) Gear											
103.34 *(77.06)*	6690 *(29.76)*	5.79 *(9.32)*	1357	1.92	6.525 *(24.700)*	0.440 *(0.268)*	15.84 *(3.120)*	184 *(84.4)*	39 *(3.9)*	41 *(4.7)*	28.60 *(96.56)*
MAXIMUM POWER IN SELECTED GEARS											
170.97 *(127.49)*	31556 *(140.37)*	2.05 *(3.27)*	2125	14.82	3rd (1C)Gear			182 *(83.3)*	40 *(4.4)*	44 *(6.7)*	28.81 *(97.29)*
180.36 *(134.49)*	28154 *(125.23)*	2.40 *(3.87)*	2100	9.49	4th (1D) Gear			182 *(83.3)*	42 *(5.6)*	46 *(7.8)*	28.81 *(97.29)*
186.35 *(138.96)*	24759 *(110.13)*	2.82 *(4.54)*	2099	7.14	5th (2A) Gear			182 *(83.3)*	45 *(7.2)*	49 *(9.4)*	28.81 *(97.29)*
189.56 *(141.36)*	22143 *(98.50)*	3.21 *(5.17)*	2098	6.22	6th (2B) Gear			183 *(83.6)*	49 *(9.4)*	53 *(11.7)*	28.82 *(97.32)*
190.71 *(142.22)*	19529 *(86.87)*	3.66 *(5.89)*	2100	5.21	7th (2C) Gear			183 *(83.6)*	50 *(10.0)*	54 *(12.2)*	28.83 *(97.35)*
193.11 *(144.00)*	17318 *(77.03)*	4.18 *(6.73)*	2099	4.02	8th (2D) Gear			184 *(84.2)*	44 *(6.7)*	50 *(10.0)*	28.83 *(97.35)*
192.82 *(143.78)*	15289 *(68.01)*	4.73 *(7.61)*	2099	3.53	9th (3A) Gear			183 *(83.6)*	44 *(6.7)*	50 *(10.0)*	28.89 *(97.56)*
192.32 *(143.41)*	13474 *(59.94)*	5.35 *(8.61)*	2100	3.04	10th (3B) Gear			183 *(83.9)*	43 *(6.1)*	50 *(10.0)*	28.93 *(97.69)*
191.18 *(142.56)*	11828 *(52.61)*	6.06 *(9.75)*	2098	2.71	11th (3C) Gear			183 *(83.9)*	44 *(6.7)*	50 *(10.0)*	28.88 *(97.52)*
187.82 *(140.06)*	10276 *(45.71)*	6.85 *(11.03)*	2100	2.30	12th (3D) Gear			183 *(83.6)*	44 *(6.7)*	51 *(10.6)*	28.87 *(97.49)*
187.62 *(139.91)*	8859 *(39.41)*	7.94 *(12.78)*	2101	1.68	13th (4A) Gear			183 *(83.9)*	45 *(7.2)*	51 *(10.6)*	28.85 *(97.42)*
183.86 *(137.10)*	7684 *(34.18)*	8.97 *(14.44)*	2101	1.62	14th (4B) Gear			182 *(83.3)*	45 *(7.2)*	51 *(10.6)*	28.84 *(97.39)*

LUGGING ABILITY IN 10th (3B) GEAR

Crankshaft Speed rpm	2100	1887	1680	1464	1246	1047
Pull—lbs *(kN)*	13474 *(59.94)*	15945 *(70.93)*	17949 *(79.84)*	19665 *(87.47)*	20253 *(90.09)*	18741 *(83.36)*
Increase in Pull %	0	18	33	46	50	39
Power—Hp *(kW)*	192.32 *(143.41)*	203.34 *(151.63)*	202.67 *(151.13)*	192.54 *(143.58)*	168.38 *(125.56)*	131.47 *(98.03)*
Speed—Mph *(km/h)*	5.35 *(8.61)*	4.78 *(7.70)*	4.23 *(6.81)*	3.67 *(5.91)*	3.12 *(5.02)*	2.63 *(4.23)*
Slip %	3.04	3.62	4.26	4.74	5.06	4.58

TRACTOR SOUND LEVEL WITH CAB	**1700 RPM dB(A)**	**1900 RPM dB(A)**	**2100 RPM dB(A)**
Maximum Available Power—Two Hours	81.0	79.5	79.0
75% of Pull at Maximum Power—Ten Hours			80.5
50% of Pull at Maximum Power—Two Hours			80.0
50% of Pull at Reduced Engine Speed—Two Hours			77.0
Bystander in 18th (5B) gear			101.5

Department of Agricultural Engineering

Dates of Test: October 10 to 23, 1984

Manufacturer: STEIGER TRACTOR, INC., 406
Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** ***(15/15°C)*** 0.8375 **Fuel weight** 6.973 lbs/gal *(0.836 kg/l)* **Oil SAE** 10W-30 **API service classification** SE-SF, CC-CD **To motor** 7.122 gal *(26.961 l)* **Drained from motor** 6.138 gal *(23.236 l)* **Transmission and hydraulic lubricant** SAE 10 hydraulic oil **Final drive lubricant** SAE 80W-90 **Total time engine was operated** 48.5 hours.

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 34505469 **Crankshaft** lengthwise **Rated rpm** 1700 to 2100 **Bore and stroke** 4.921" × 5.354" *(125 mm × 136 mm)* **Compression ratio** 16.0 to 1 **Displacement** 611 cu in *(10014 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission and transfer case oil **Fuel filter** one paper cartridge **Muffler** none **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 112-03847 **Tread width** rear 79" *(2007 mm)* to 136.3" *(3462 mm)* front 79" *(2007 mm)* to 136.3" *(3462 mm)* **Wheel base** 129" *(3277 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 74.4" *(1890 mm)* Vertical distance above roadway 45.5" *(1156 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** ***(km/h)*** first 1.8 *(2.9)* second 2.0 *(3.2)* third 2.3 *(3.7)* fourth 2.6 *(4.2)* fifth 2.9 *(4.7)* sixth 3.3 *(5.3)* seventh 3.7 *(6.0)* eighth 4.2 *(6.8)* ninth 4.7 *(7.6)* tenth 5.4 *(8.7)* eleventh 6.0 *(9.7)* twelfth 6.8 *(10.9)* thirteenth 7.8 *(12.6)* fourteenth 8.9 *(14.3)* fifteenth 10.0 *(16.1)* sixteenth 11.3 *(18.2)* seventeenth 12.5 *(20.1)* eighteenth 14.2 *(22.9)* nineteenth 15.8 *(25.4)* twentieth 18.0 *(29.0)* reverse 1.8 *(2.9)*, 2.0 *(3.2)*, 2.3 *(3.7)*, 2.6 *(4.2)* **Clutch** dual dry disc hydraulically actuated by foot pedal **Brakes** single caliper disc hydraulically actuated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 283" *(7.19 m)* left 288" *(7.32 m)* **Turning space diameter** (on concrete surface without brake) right 590" *(14.99 m)* left 600" *(15.24 m)* **Power take-off** none **Unladen tractor mass** 28220 lb *(12801 kg)*.

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Temp. °F (°C) Air wet bulb	Temp. °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 10th (3B) Gear											
291.87 *(217.65)*	17987 *(80.01)*	6.09 *(9.79)*	1899	4.30	17.396 *(65.850)*	0.416 *(0.253)*	16.78 *(3.305)*	184 *(84.2)*	64 *(17.5)*	71 *(21.4)*	29.03 *(98.03)*
MAXIMUM POWER IN SELECTED GEARS											
247.31 *(184.42)*	32507 *(144.60)*	2.85 *(4.59)*	2063	14.71	4th (1D) Gear			180 *(82.2)*	42 *(5.6)*	46 *(7.8)*	28.50 *(96.24)*
259.80 *(193.73)*	32237 *(143.40)*	3.02 *(4.86)*	1902	13.96	5th (2A) Gear			180 *(82.2)*	42 *(5.6)*	45 *(7.2)*	28.48 *(96.17)*
277.51 *(206.94)*	28968 *(128.85)*	3.59 *(5.78)*	1901	9.05	6th (2B) Gear			182 *(83.3)*	61 *(16.1)*	65 *(18.3)*	28.97 *(97.83)*
280.73 *(209.34)*	25161 *(111.92)*	4.18 *(6.73)*	1904	6.87	7th (2C) Gear			182 *(83.3)*	62 *(16.7)*	67 *(19.4)*	28.97 *(97.83)*
286.10 *(213.34)*	22532 *(100.23)*	4.76 *(7.66)*	1901	5.81	8th (2D) Gear			183 *(83.9)*	63 *(17.2)*	70 *(21.1)*	28.96 *(97.79)*
291.07 *(217.05)*	20303 *(90.31)*	5.38 *(8.65)*	1902	4.81	9th (3A) Gear			183 *(83.9)*	64 *(17.8)*	71 *(21.7)*	28.97 *(97.83)*
299.30 *(223.19)*	18426 *(81.96)*	6.09 *(9.80)*	1901	4.34	10th (3B) Gear			184 *(84.4)*	65 *(18.3)*	73 *(22.8)*	28.99 *(97.89)*
296.85 *(221.36)*	15973 *(71.05)*	6.97 *(11.22)*	1900	3.63	11th (3C) Gear			183 *(83.9)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*
296.58 *(221.16)*	14071 *(62.59)*	7.90 *(12.72)*	1902	3.07	12th (3D) Gear			184 *(84.2)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*
293.86 *(219.13)*	12109 *(53.86)*	9.10 *(14.65)*	1900	2.58	13th (4A) Gear			183 *(83.9)*	64 *(17.8)*	72 *(22.2)*	28.97 *(97.83)*

DRAWBAR PERFORMANCE AT 1700 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Temp. °F (°C) Air wet bulb	Temp. °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 10th (3B) Gear											
289.58 *(215.94)*	20122 *(89.51)*	5.40 *(8.68)*	1700	5.28	16.757 *(63.434)*	0.404 *(0.245)*	17.28 *(3.404)*	182 *(83.1)*	45 *(7.2)*	51 *(10.6)*	28.59 *(96.54)*
MAXIMUM POWER IN SELECTED GEARS											
263.43 *(196.44)*	32700 *(145.46)*	3.02 *(4.86)*	1697	14.34	6th (2B) Gear			182 *(83.1)*	43 *(6.1)*	47 *(8.3)*	28.52 *(96.31)*
274.21 *(204.48)*	28016 *(124.62)*	3.67 *(5.91)*	1702	8.77	7th (2C) Gear			182 *(83.3)*	62 *(16.7)*	68 *(20.0)*	28.96 *(97.79)*
282.41 *(210.59)*	25169 *(111.96)*	4.21 *(6.77)*	1701	7.02	8th (2D) Gear			184 *(84.2)*	64 *(17.8)*	72 *(22.2)*	28.96 *(97.79)*
290.89 *(216.92)*	22930 *(102.00)*	4.76 *(7.66)*	1700	5.97	9th (3A) Gear			185 *(84.7)*	64 *(17.8)*	71 *(21.7)*	28.97 *(97.83)*
298.04 *(222.25)*	20673 *(91.96)*	5.41 *(8.70)*	1700	5.12	10th (3B) Gear			185 *(85.0)*	65 *(18.3)*	73 *(22.8)*	28.98 *(97.86)*
296.55 *(221.14)*	17932 *(79.77)*	6.20 *(9.98)*	1701	4.26	11th (3C) Gear			185 *(84.7)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*
298.41 *(222.52)*	15899 *(70.72)*	7.04 *(11.33)*	1701	3.63	12th (3D) Gear			185 *(84.7)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*
297.32 *(221.71)*	13742 *(61.13)*	8.11 *(13.06)*	1701	2.99	15th (4A) Gear			185 *(85.0)*	64 *(17.8)*	71 *(21.7)*	28.97 *(97.83)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., Size, ply & psi *(kPa)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	1258 lb *(570 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., Size, ply & psi *(kPa)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	720 lb *(327 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		18 in *(455 mm)*	18 in *(455 mm)*
Static Weight with Operator	—Rear	14315 lb *(6493 kg)*	11800 lb *(5352 kg)*
	—Front	19400 lb *(8800 kg)*	17960 lb *(8147 kg)*
	—Total	33715 lb *(15293 kg)*	29760 lb *(13499 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 122°F *(50.0°C)*. Ten gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. The engine oil pressure guage did not function properly during drawbar tests.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1545**, December 3, 1984.

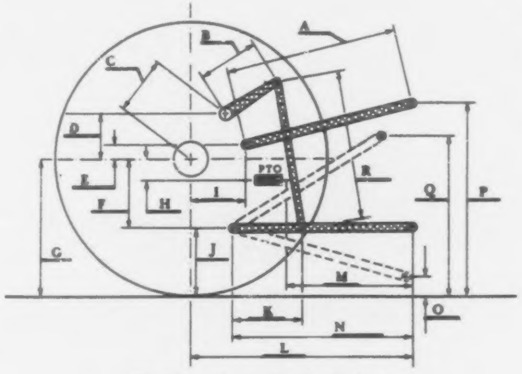
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2300	*15860*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	129	*54*	
Location	hydraulic reservoir		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	12752	*5784*	
TIME sec	3.47		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	14.9	*378*	
Top of timed range	40.9	*1038*	
Highest position	41.4	*1051*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	14.5	*368*	
Top of timed range	43.4	*1102*	
Highest position	44.0	*1118*	

*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.4	*797*
B	15.0	*381*
C	26.8	*681*
D	22.3	*566*
E	5.7	*145*
F	13.5	*343*
G	32.1	*816*
H	NA	*NA*
I	18.1	*460*
J	18.6	*473*
K	15.0	*381*
L	50.1	*1273*
L'	56.6	*1438*
M	NA	*NA*
N	32.0	*813*
O	8.0	*203*
P	40.6	*1032*
Q	35.8	*908*
R	34.5	*876*

L' to end of quick attach

Steiger Bearcat IV KM-225 Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1577—STEIGER COUGAR CR 1225 DIESEL 20 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—999 rpm)								
208.61 *(155.56)*	2100	12.675 *(47.980)*	0.426 *(0.259)*	16.46 *(3.242)*	179 *(81.7)*	62 *(16.6)*	75 *(23.9)*	29.06 *(98.12)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
180.36 *(134.49)*	2135	11.374 *(43.054)*	0.442 *(0.269)*	15.86 *(3.124)*	179 *(81.7)*	66 *(18.6)*	75 *(23.9)*	—
0.00 *(0.00)*	2250	3.530 *(13.363)*	—	—	175 *(79.4)*	65 *(18.1)*	73 *(22.8)*	—
92.97 *(69.32)*	2202	7.548 *(28.573)*	0.569 *(0.346)*	12.32 *(2.426)*	176 *(80.0)*	65 *(18.3)*	74 *(23.3)*	—
210.22 *(156.76)*	2100	12.734 *(48.204)*	0.425 *(0.258)*	16.51 *(3.252)*	180 *(81.9)*	66 *(18.6)*	74 *(23.3)*	—
46.86 *(34.94)*	2225	5.627 *(21.300)*	0.842 *(0.512)*	8.33 *(1.640)*	176 *(79.7)*	67 *(19.2)*	73 *(22.8)*	—
137.36 *(102.43)*	2169	9.444 *(35.748)*	0.482 *(0.293)*	14.55 *(2.865)*	178 *(81.1)*	68 *(19.7)*	76 *(24.2)*	—
Av 111.29 **Av** ***(82.99)***	**2180**	**8.376** ***(31.707)***	**0.528** ***(0.321)***	**13.29** ***(2.617)***	**177** ***(80.6)***	**66** ***(18.8)***	**74** ***(23.4)***	**29.02** ***(97.98)***

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 10th (5LL) Gear											
181.39 *(135.26)*	13186 *(58.65)*	5.16 *(8.30)*	2101	3.06	12.594 *(47.675)*	0.487 *(0.296)*	14.40 *(2.837)*	182 *(83.3)*	50 *(9.7)*	58 *(14.4)*	28.84 *(97.39)*
75% of Pull at Maximum Power — Ten Hours 10th (5LL) Gear											
143.07 *(106.68)*	10083 *(44.85)*	5.32 *(8.56)*	2147	2.14	10.630 *(40.241)*	0.521 *(0.317)*	13.46 *(2.651)*	180 *(82.2)*	46 *(7.8)*	54 *(12.2)*	28.94 *(97.71)*
50% of Pull at Maximum Power — Two Hours 10th (5LL) Gear											
97.78 *(72.92)*	6722 *(29.90)*	5.45 *(8.78)*	2185	1.45	8.544 *(32.341)*	0.613 *(0.373)*	11.44 *(2.255)*	178 *(81.1)*	48 *(8.9)*	55 *(12.8)*	28.87 *(97.47)*
50% of Pull at Reduced Engine Speed — Two Hours 15th (2HH) Gear											
97.98 *(73.06)*	6720 *(29.89)*	5.47 *(8.80)*	1211	1.53	6.454 *(24.432)*	0.462 *(0.281)*	15.18 *(2.990)*	178 *(81.1)*	51 *(10.6)*	58 *(14.4)*	28.75 *(97.08)*

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
147.16 *(109.74)*	29570 *(131.53)*	1.87 *(3.00)*	2125	14.96	2nd (1LH) Gear	179 *(81.7)*	45 *(7.2)*	49 *(9.4)*	28.74 *(97.05)*
178.21 *(132.89)*	25887 *(106.28)*	2.80 *(4.50)*	2102	6.56	3rd (2LL) Gear	179 *(81.7)*	48 *(8.9)*	51 *(10.6)*	28.82 *(97.32)*
180.08 *(134.29)*	21332 *(94.89)*	3.17 *(5.09)*	2101	5.57	4th (3LL) Gear	180 *(82.2)*	49 *(9.4)*	52 *(11.1)*	28.82 *(97.32)*
180.79 *(134.82)*	19826 *(88.19)*	3.42 *(5.50)*	2100	5.11	5th (2LH) Gear	180 *(82.2)*	49 *(9.4)*	52 *(11.1)*	28.82 *(97.32)*
181.86 *(135.61)*	17706 *(78.76)*	3.85 *(6.20)*	2099	4.55	6th (3LH) Gear	181 *(82.5)*	49 *(9.4)*	53 *(11.7)*	28.82 *(97.32)*
182.22 *(135.88)*	17341 *(77.13)*	3.94 *(6.34)*	2099	4.33	7th (4LL) Gear	181 *(82.8)*	49 *(9.4)*	53 *(11.7)*	28.83 *(97.35)*
183.50 *(136.83)*	14812 *(65.89)*	4.65 *(7.48)*	2100	3.58	8th (1HL) Gear	181 *(82.5)*	50 *(10.0)*	54 *(12.2)*	28.83 *(97.35)*
181.64 *(135.45)*	14222 *(63.26)*	4.79 *(7.71)*	2101	3.14	9th (4LH) Gear	181 *(82.5)*	50 *(10.0)*	54 *(12.2)*	28.83 *(97.35)*
184.83 *(137.83)*	13444 *(59.80)*	5.16 *(8.30)*	2100	3.06	10th (5LL) Gear	181 *(82.8)*	50 *(10.0)*	58 *(14.4)*	28.84 *(97.39)*
182.52 *(136.10)*	12161 *(54.09)*	5.63 *(9.06)*	2100	2.73	11th (1HH) Gear	181 *(82.8)*	50 *(10.0)*	57 *(13.9)*	28.84 *(97.39)*
178.64 *(133.21)*	10737 *(47.76)*	6.24 *(10.04)*	2099	2.24	12th (5LH) Gear	181 *(82.8)*	50 *(10.0)*	56 *(13.3)*	28.84 *(97.39)*
181.46 *(135.32)*	8668 *(38.55)*	7.85 *(12.63)*	2099	1.73	13th (2HL) Gear	181 *(82.8)*	50 *(10.0)*	55 *(12.8)*	28.84 *(97.39)*
180.16 *(134.35)*	7670 *(34.12)*	8.81 *(14.18)*	2099	1.66	14th (3HL) Gear	181 *(82.8)*	50 *(10.0)*	55 *(12.8)*	28.83 *(97.35)*

Department of Agricultural Engineering

Dates of Test: September 23 to 30, 1985

Manufacturer: STEIGER TRACTOR INC. 406 Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8420 **Fuel weight** 7.011 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W-40 **API service classification** CD, SF, CC **To motor** 5.893 gal *(22.308 l)* **Drained from motor** 5.237 gal *(19.823 l)* **Transmission and final drive lubricant** Steiger hydraulic/transmission fluid **Total time engine was operated** 54.0 hours.

ENGINE: Make Caterpillar Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 64Z05886 **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.75" × 6.00" *(120.7 mm × 152.4 mm)* **Compression ratio** 15.0 to 1 **Displacement** 638 cu in *(10455 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission oil **Fuel filter** one paper cartridge and prestrainer **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** C01-05339 **Tread width** rear 64" *(1625 mm)* to 130" *(3302 mm)* front 64" *(1625 mm)* to 130" *(3302 mm)* **Wheel base** 130" *(3302 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 72.0" *(1829 mm)* Vertical distance above roadway 46.0" *(1168 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Advertised speeds mph (km/h)** first 1.8 *(2.9)* second 2.1 *(3.4)* third 2.9 *(4.7)* fourth 3.3 *(5.3)* fifth 3.5 *(5.6)* sixth 3.9 *(6.3)* seventh 4.0 *(6.4)* eighth 4.7 *(7.6)* ninth 4.8 *(7.7)* tenth 5.2 *(8.4)* eleventh 5.6 *(9.0)* twelfth 6.2 *(10.0)* thirteenth 7.8 *(12.6)* fourteenth 8.7 *(14.0)* fifteenth 9.4 *(15.1)* sixteenth 10.5 *(16.9)* seventeenth 10.7 *(17.2)* eighteenth 12.9 *(20.8)* nineteenth 13.8 *(22.2)* twentieth 16.6 *(26.7)* reverse 3.2 *(5.2)*, 3.9 *(6.3)*, 8.7 *(14.0)*, 10.4 *(16.8)* **Clutch** wet multiple disc hydraulically power actuated and operated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 240" *(6.1 m)* left 240" *(6.1 m)* **Turning space diameter** (on concrete surface without brake) right 499" *(12.67 m)* left 499" *(12.67 m)* **Power take-off** 999 rpm at 2100 engine rpm **Unladen tractor mass** 26050 lb *(11816 kg)*.

LUGGING ABILITY IN 10th (5LL) GEAR

Crankshaft Speed rpm	2100	1890	1685	1470	1260	1047
Pull—lbs	13444	16082	17108	17924	18044	17790
(kN)	(59.80)	(71.54)	(76.10)	(79.73)	(80.26)	(79.13)
Increase in Pull %	0	20	27	33	34	32
Power—Hp	184.83	197.52	186.58	170.00	146.57	120.40
(kW)	(137.83)	(147.29)	(139.14)	(126.77)	(109.30)	(89.78)
Speed—Mph	5.16	4.61	4.09	3.56	3.05	2.54
(km/h)	(8.30)	(7.41)	(6.58)	(5.72)	(4.90)	(4.08)
Slip %	3.06	3.86	4.02	4.17	4.53	4.17

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	78.0
75% of Pull at Maximum Power—Ten Hours	79.0
50% of Pull at Maximum Power—Two Hours	78.0
50% of Pull at Reduced Engine Speed—Two Hours	75.0
Bystander in 20th (5HH) gear	90.0

TIRES, BALLAST AND WEIGHT		Tested Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 23.1-34; 8; inner 14 (97) outer 12 (83)
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Front Tires	—No., size, ply & psi (kPa)	Four 23.1-34; 8; inner 14 (97) outer 12 (83)
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Height of Drawbar		14.5 in (370 mm)
Static Weight with Operator	—Rear	12965 lb (5881 kg)
	—Front	16225 lb (7360 kg)
	—Total	29190 lb (13241 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2500	(17240)	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	121	(49)	
Location	hydraulic reservoir		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs (kg)	9930	(4504)	
TIME sec	2.64		
HITCH POINT MOVEMENT in (mm)			
Lowest position	12.0	(305)	
Top of timed range	38.0	(965)	
Highest position	40.3	(1024)	
LOAD CG MOVEMENT in (mm)			
Lowest position	12.2	(310)	
Top of timed range	39.3	(998)	
Highest position	42.4	(1077)	

*Implement load capacity for transport purposes not specified by manufacturer.

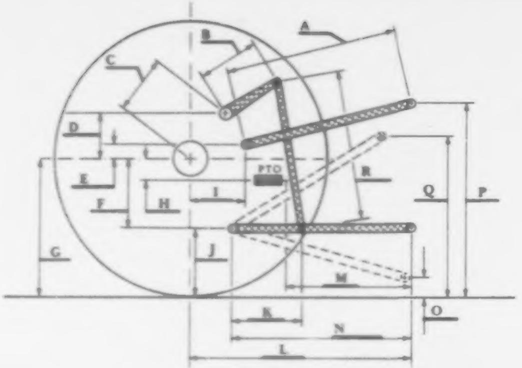
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 156°F *(68.8°C)*. Thirteen gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1577, October 30, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
T. L. THOMPSON
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	29.4	*746*
B	21.0	*533*
C	25.8	*654*
D	25.1	*638*
E	11.4	*289*
F	9.9	*251*
G	32.3	*819*
H	2.2	*56*
I	23.3	*591*
J	22.4	*568*
K	23.0	*584*
L	52.7	*1338*
L′	57.7	*1465*
M	25.0	*635*
N	42.0	*1067*
O	7.9	*201*
P	44.4	*1127*
Q	40.4	*1026*
R	35.3	*895*

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Steiger Cougar CR 1225 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1578—STEIGER COUGAR CR 1280 DIESEL 20 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank-shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—999 rpm)								
258.15 *(192.51)*	2100	15.021 *(56.862)*	0.408 *(0.248)*	17.19 *(3.385)*	179 *(81.8)*	63 *(17.1)*	75 *(24.1)*	28.84 *(97.37)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
223.90 *(166.96)*	2142	13.485 *(51.048)*	0.422 *(0.257)*	16.60 *(3.271)*	179 *(81.7)*	64 *(17.5)*	75 *(23.6)*	
0.00 *(0.00)*	2281	3.726 *(14.106)*			177 *(80.5)*	63 *(17.2)*	74 *(23.3)*	
115.84 *(86.38)*	2220	8.745 *(33.103)*	0.529 *(0.322)*	13.25 *(2.609)*	178 *(81.1)*	64 *(17.8)*	75 *(23.6)*	
257.95 *(192.35)*	2100	14.987 *(56.733)*	0.407 *(0.248)*	17.21 *(3.391)*	180 *(81.9)*	67 *(19.2)*	77 *(25.0)*	
58.87 *(43.90)*	2253	6.323 *(23.937)*	0.753 *(0.458)*	9.31 *(1.834)*	177 *(80.6)*	65 *(18.3)*	75 *(23.6)*	
171.08 *(127.57)*	2183	11.102 *(42.027)*	0.455 *(0.277)*	15.41 *(3.035)*	178 *(81.1)*	67 *(19.2)*	76 *(24.4)*	
Av 137.94 **Av *(102.86)***	**2196**	**9.728** ***(36.826)***	**0.495** ***(0.301)***	**14.18** ***(2.793)***	**178** ***(81.1)***	**65** ***(18.2)***	**75** ***(23.9)***	**28.85** ***(97.41)***

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 10th (5LL) Gear											
225.22 *(167.95)*	16251 *(72.29)*	5.20 *(8.36)*	2100	3.84	14.839 *(56.171)*	0.462 *(0.281)*	15.18 *(2.990)*	182 *(83.3)*	49 *(9.4)*	60 *(15.6)*	29.02 *(97.98)*
75% of Pull at Maximum Power — Ten Hours 10th (5LL) Gear											
180.58 *(134.66)*	12517 *(55.68)*	5.41 *(8.71)*	2165	2.74	12.627 *(47.798)*	0.490 *(0.298)*	14.30 *(2.817)*	182 *(83.3)*	41 *(5.2)*	47 *(8.2)*	29.15 *(98.42)*
50% of Pull at Maximum Power — Two Hours 10th (5LL) Gear											
124.10 *(92.54)*	8345 *(37.12)*	5.58 *(8.97)*	2208	1.91	10.040 *(38.005)*	0.567 *(0.345)*	12.36 *(2.435)*	181 *(82.8)*	36 *(1.9)*	39 *(3.9)*	29.12 *(98.32)*
50% of Pull at Reduced Engine Speed — Two Hours 15th (2HH) Gear											
124.14 *(92.57)*	8345 *(37.12)*	5.58 *(8.98)*	1221	1.74	8.214 *(31.095)*	0.454 *(0.282)*	15.11 *(2.977)*	181 *(82.5)*	44 *(6.4)*	52 *(10.8)*	29.11 *(98.28)*
MAXIMUM POWER IN SELECTED GEARS											
199.08 *(148.45)*	28708 *(127.70)*	2.60 *(4.19)*	2110	14.84	3rd (2LL) Gear			184 *(84.2)*	46 *(7.8)*	56 *(13.3)*	29.08 *(98.20)*
216.62 *(161.53)*	26013 *(115.71)*	3.12 *(5.03)*	2100	8.23	4th (3LL) Gear			184 *(84.2)*	46 *(7.8)*	57 *(13.9)*	29.07 *(98.17)*
221.01 *(164.81)*	24319 *(108.17)*	3.41 *(5.48)*	2099	6.89	5th (2LH) Gear			183 *(83.9)*	60 *(15.6)*	70 *(21.1)*	28.73 *(97.02)*
224.15 *(167.15)*	21758 *(96.78)*	3.86 *(6.22)*	2100	5.66	6th (3LH) Gear			183 *(83.9)*	60 *(15.6)*	70 *(21.1)*	28.73 *(97.02)*
223.40 *(166.59)*	21195 *(94.28)*	3.95 *(6.36)*	2099	5.43	7th (4LL) Gear			182 *(83.3)*	60 *(15.6)*	70 *(21.1)*	28.73 *(97.02)*
226.75 *(169.09)*	18194 *(80.93)*	4.67 *(7.52)*	2098	4.32	8th (1HL) Gear			182 *(83.3)*	60 *(15.6)*	70 *(21.1)*	28.73 *(97.02)*
226.34 *(168.78)*	17595 *(78.26)*	4.82 *(7.76)*	2102	4.16	9th (4LH) Gear			182 *(83.3)*	60 *(15.6)*	70 *(21.1)*	28.74 *(97.05)*
231.19 *(172.40)*	16689 *(74.24)*	5.19 *(8.36)*	2099	3.76	10th (5LL) Gear			182 *(83.3)*	60 *(15.6)*	70 *(21.1)*	28.76 *(97.12)*
228.45 *(170.36)*	15078 *(67.07)*	5.68 *(9.14)*	2100	3.27	11th (1HH) Gear			182 *(83.3)*	60 *(15.6)*	70 *(21.1)*	28.76 *(97.12)*
225.24 *(167.96)*	13398 *(59.60)*	6.30 *(10.15)*	2099	2.78	12th (5LH) Gear			183 *(83.6)*	60 *(15.6)*	70 *(21.1)*	28.75 *(97.08)*
227.66 *(169.76)*	10760 *(47.86)*	7.93 *(12.77)*	2096	2.20	13th (2HL) Gear			183 *(83.9)*	60 *(15.6)*	70 *(21.1)*	28.75 *(97.08)*
225.60 *(168.23)*	9480 *(42.17)*	8.92 *(14.36)*	2101	2.03	14th (3HL) Gear			183 *(83.9)*	60 *(15.6)*	70 *(21.1)*	28.74 *(97.05)*

Department of Agricultural Engineering

Dates of Test: September 23 to October 2, 1985

Manufacturer: STEIGER TRACTOR INC., 406 Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8422 **Fuel weight** 7.012 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W-40 **API service classification** CD, SF, CC **To motor** 5.861 gal *(22.184 l)* **Drained from motor** 5.202 gal *(19.690 l)* **Transmission and final drive lubricant** Steiger hydraulic/transmission fluid **Total time engine was operated** 35.5 hours.

ENGINE: Make Caterpillar Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 64Z03842 **Crankshaft** lengthwise **Rated rpm** 2100 **Bore and stroke** 4.75" × 6.00" *(120.7 mm × 152.4 mm)* **Compression ratio** 15.0 to 1 **Displacement** 638 cu in *(10455 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission oil **Fuel filter** one paper cartridge and prestrainer **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** C03-05307 **Tread width** rear 64" *(1625 mm)* to 130" *(3302 mm)* front 64" *(1625 mm)* to 130" *(3302 mm)* **Wheel base** 130" *(3302 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 72" *(1829 mm)* Vertical distance above roadway 46" *(1168 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Advertised speeds mph *(km/h)*** first 1.8 *(2.9)* second 2.1 *(3.4)* third 2.9 *(4.7)* fourth 3.3 *(5.3)* fifth 3.5 *(5.6)* sixth 3.9 *(6.3)* seventh 4.0 *(6.4)* eighth 4.7 *(7.6)* ninth 4.8 *(7.7)* tenth 5.2 *(8.4)* eleventh 5.6 *(9.0)* twelfth 6.2 *(10.0)* thirteenth 7.8 *(12.6)* fourteenth 8.7 *(14.0)* fifteenth 9.4 *(15.1)* sixteenth 10.5 *(16.9)* seventeenth 10.7 *(17.2)* eighteenth 12.9 *(20.8)* nineteenth 13.8 *(22.2)* twentieth 16.6 *(26.7)* reverse 3.2 *(5.2)*, 3.9 *(6.3)*, 8.7 *(14.0)*, 10.4 *(16.8)* **Clutch** wet multiple disc hydraulically power actuated and operated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 240" *(6.1 m)* left 240" *(6.1 m)* **Turning space diameter** (on concrete surface without brake) right 501" *(12.73 m)* left 501" *(12.73 m)* **Power take-off** 999 rpm at 2100 engine rpm **Unladen tractor mass** 26460 lb *(12002 kg)*.

LUGGING ABILITY IN 10th (5LL) GEAR

Crankshaft Speed rpm	2099	1891	1683	1474	1258	1045
Pull—lbs *(kN)*	16689 *(74.24)*	19636 *(87.35)*	20967 *(93.27)*	21528 *(95.76)*	21441 *(95.37)*	20306 *(90.33)*
Increase in Pull %	0	18	26	29	28	22
Power—Hp *(kW)*	231.19 *(172.40)*	242.53 *(180.85)*	229.64 *(171.25)*	205.56 *(153.28)*	174.59 *(130.19)*	137.93 *(102.85)*
Speed—Mph *(km/h)*	5.19 *(8.36)*	4.65 *(7.49)*	4.11 *(6.61)*	3.58 *(5.76)*	3.05 *(4.91)*	2.55 *(4.10)*
Slip %	3.76	4.80	5.12	5.43	5.59	5.27

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
Maximum Available Power—Two Hours	77.0
75% of Pull at Maximum Power—Ten Hours	77.5
50% of Pull at Maximum Power—Two Hours	78.0
50% of Pull at Reduced Engine Speed—Two Hours	74.5
Bystander in 20th (5HH) gear	90.5

TIRES, BALLAST AND WEIGHT		**Tested Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Four 23.1-34, 8, inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Front Tires	—No., size, ply & psi *(kPa)*	Four 23.1-34, 8, inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Height of Drawbar		14.5 in *(370 mm)*
Static Weight with Operator	—Rear	13100 lb *(5942 kg)*
	—Front	16500 lb *(7484 kg)*
	—Total	29600 lb *(13426 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2500	*(17240)*	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	130	*(54)*	
Location	hydraulic reservoir		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	12734	*(5776)*	
TIME sec	3.14		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	11.3	*(287)*	
Top of timed range	37.3	*(947)*	
Highest position	40.6	*(1031)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	12.0	*(305)*	
Top of timed range	38.7	*(983)*	
Highest position	42.5	*(1080)*	

*Implement load capacity for transport purposes not specified by manufacturer

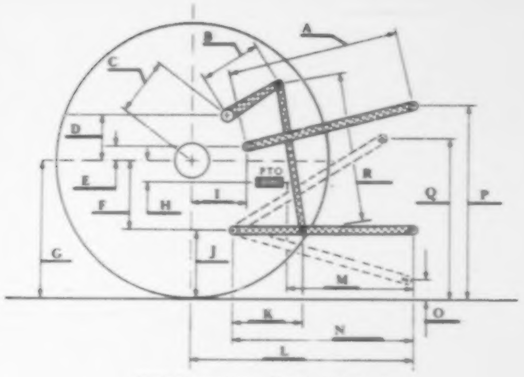
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 139°F *(59.5°C)*. Twelve gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1578**, October 30, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
T. L. THOMPSON
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	29.5	*749*
B	21.0	*533*
C	25.8	*654*
D	25.1	*638*
E	11.4	*289*
F	9.9	*251*
G	32.8	*832*
H	2.2	*56*
I	23.3	*591*
J	22.9	*581*
K	23.0	*584*
L	52.7	*1338*
L'	57.7	*1465*
M	25.0	*635*
N	42.0	*1067*
O	8.0	*203*
P	44.9	*1140*
Q	40.9	*1038*
R	35.4	*899*

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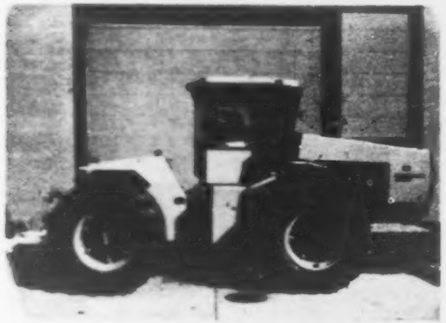


Steiger Cougar CR 1280 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1543—STEIGER PANTHER IV KM-325 DIESEL 20 SPEED

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 10th (3B) Gear											
276.11 *(205.90)*	15276 *(67.95)*	6.78 *(10.91)*	2100	3.63	17.209 *(65.144)*	0.435 *(0.264)*	16.04 *(3.161)*	182 *(83.1)*	61 *(15.8)*	65 *(18.1)*	29.08 *(98.18)*
75% of Pull at Maximum Power — Ten Hours 10th (3B) Gear											
229.31 *(170.99)*	11853 *(52.73)*	7.25 *(11.67)*	2224	2.73	15.501 *(58.679)*	0.471 *(0.287)*	14.79 *(2.914)*	181 *(82.9)*	62 *(16.4)*	64 *(17.5)*	28.81 *(97.29)*
50% of Pull at Maximum Power — Two Hours 10th (3B) Gear											
156.50 *(116.70)*	7902 *(35.15)*	7.43 *(11.95)*	2257	1.88	12.039 *(45.574)*	0.536 *(0.326)*	13.00 *(2.561)*	180 *(82.2)*	66 *(18.6)*	77 *(24.7)*	28.91 *(97.61)*
50% of Pull at Reduced Engine Speed — Two Hours 14th (4B) Gear											
156.52 *(116.72)*	7901 *(35.15)*	7.43 *(11.96)*	1366	1.80	9.781 *(37.024)*	0.436 *(0.265)*	16.00 *(3.153)*	182 *(83.1)*	64 *(17.5)*	73 *(22.5)*	28.89 *(97.54)*

MAXIMUM POWER IN SELECTED GEARS

230.36 *(171.78)*	32565 *(144.85)*	2.65 *(4.27)*	2166	14.90	3rd (1C) Gear			180 *(82.2)*	42 *(5.6)*	45 *(7.2)*	28.46 *(96.11)*
251.55 *(187.58)*	31388 *(139.62)*	3.01 *(4.84)*	2100	11.81	4th (1D) Gear			180 *(82.2)*	42 *(5.6)*	45 *(7.2)*	28.47 *(96.14)*
268.17 *(199.98)*	28334 *(126.04)*	3.55 *(5.71)*	2099	8.34	5th (2A) Gear			181 *(82.8)*	60 *(15.6)*	63 *(17.2)*	28.97 *(97.83)*
273.85 *(204.21)*	25240 *(112.27)*	4.07 *(6.55)*	2099	6.79	6th (2B) Gear			181 *(82.8)*	60 *(15.6)*	64 *(17.8)*	28.97 *(97.83)*
274.17 *(204.45)*	21962 *(97.69)*	4.68 *(7.53)*	2099	5.51	7th (2C) Gear			182 *(83.1)*	61 *(16.1)*	66 *(18.9)*	28.97 *(97.83)*
275.16 *(205.18)*	19426 *(86.41)*	5.31 *(8.55)*	2097	4.66	8th (2D) Gear			183 *(83.6)*	63 *(17.2)*	69 *(20.6)*	28.96 *(97.79)*
282.43 *(210.61)*	17674 *(78.62)*	5.99 *(9.64)*	2100	4.11	9th (3A) Gear			183 *(83.6)*	64 *(17.8)*	71 *(21.7)*	28.97 *(97.83)*
285.67 *(213.03)*	15804 *(70.30)*	6.78 *(10.91)*	2100	3.55	10th (3B) Gear			184 *(84.2)*	65 *(18.3)*	73 *(22.8)*	28.99 *(97.89)*
282.55 *(210.70)*	13677 *(60.84)*	7.75 *(12.47)*	2099	3.15	11th (3C) Gear			182 *(83.3)*	65 *(18.3)*	73 *(22.8)*	28.98 *(97.86)*
280.77 *(209.37)*	12016 *(53.45)*	8.76 *(14.10)*	2097	2.58	12th (3D) Gear			182 *(83.3)*	64 *(17.8)*	72 *(22.2)*	28.98 *(97.86)*

LUGGING ABILITY IN 10th (3B) GEAR

Crankshaft Speed rpm	2100	1880	1681	1464	1250	1042
Pull—lbs *(kN)*	15804 *(70.30)*	18412 *(81.90)*	20631 *(91.77)*	22890 *(101.82)*	23545 *(104.73)*	18487 *(82.23)*
Increase in Pull %	0	17	31	45	49	17
Power—Hp *(kW)*	285.67 *(213.03)*	295.86 *(220.63)*	294.04 *(219.26)*	281.54 *(209.94)*	246.09 *(183.51)*	164.19 *(122.44)*
Speed—Mph *(km/h)*	6.78 *(10.91)*	6.03 *(9.70)*	5.34 *(8.60)*	4.61 *(7.42)*	3.92 *(6.31)*	3.33 *(5.36)*
Slip %	3.55	4.42	5.05	5.97	6.42	4.58

TRACTOR SOUND LEVEL WITH CAB	**1700 RPM dB(A)**	**1900 RPM dB(A)**	**2100 RPM dB(A)**
Maximum Available Power—Two Hours	78.0	77.5	79.0
75% of Pull at Maximum Power—Ten Hours			79.0
50% of Pull at Maximum Power—Two Hours			78.5
50% of Pull at Reduced Engine Speed—Two Hours			76.5
Bystander in 18th (5B) gear			104.0

Department of Agricultural Engineering

Dates of Test: October 9 to 16, 1984

Manufacturer: STEIGER TRACTOR, INC., 406 Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8375 **Fuel weight** 6.973 lbs/gal *(0.836 kg/l)* **Oil SAE** 10W-30 **API service classification** SE-SF, CC-CD **To motor** 8.256 gal *(31.251 l)* **Drained from motor** 7.409 gal *(28.048 l)* **Transmission and hydraulic lubricant** SAE 10 hydraulic oil **Final drive lubricant** SAE 80W-90 **Total time engine was operated** 47.5 hours.

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 18107122 **Crankshaft** lengthwise **Rated rpm** 1700 to 2100 **Bore and stroke** 5.5" × 6.0" *(139.7 mm × 152.4 mm)* **Compression ratio** 14.1 to 1 **Displacement** 855 cu in *(14011 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission and transfer case oil **Fuel filter** two paper cartridges **Muffler** none **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 107-03838 **Tread width** rear 79" *(2007 mm)* to 136.3" *(3462 mm)* front 79" *(2007 mm)* to 136.3" *(3462 mm)* **Wheel base** 129" *(3277 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 77.9" *(1978 mm)* Vertical distance above roadway 45.5" *(1156 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 2.3 *(3.7)* second 2.6 *(4.2)* third 3.0 *(4.8)* fourth 3.4 *(5.5)* fifth 3.8 *(6.1)* sixth 4.3 *(6.9)* seventh 4.9 *(7.9)* eighth 5.5 *(8.8)* ninth 6.1 *(9.8)* tenth 7.0 *(11.3)* eleventh 7.8 *(12.5)* twelfth 8.9 *(14.3)* thirteenth 10.2 *(16.4)* fourteenth 11.5 *(18.5)* fifteenth 13.0 *(20.9)* sixteenth 14.8 *(23.8)* seventeenth 15.8 *(25.4)* eighteenth 18.0 *(29.0)* nineteenth 20.3 *(32.7)* twentieth 23.1 *(37.2)* reverse 2.3 *(3.7)*, 2.6 *(4.2)*, 3.0 *(4.8)*, 3.4 *(5.5)* **Clutch** dual dry disc hydraulically operated by foot pedal **Brakes** dual caliper, single disc hydraulically actuated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 283" *(7.19 m)* left 288" *(7.32 m)* **Turning space diameter** (on concrete surface without brake) right 590" *(14.99 m)* left 600" *(15.24 m)* **Power take-off** none **Unladen tractor mass** 29580 lb *(13417 kg)*.

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling med	Air wet bulb	Air dry bulb	
Maximum Available Power — Two Hours 10th (3B) Gear											
199.69 *(148.91)*	15550 *(69.17)*	4.82 *(7.75)*	1900	3.66	11.545 *(43.701)*	0.403 *(0.245)*	17.30 *(3.407)*	184 *(84.4)*	41 *(4.7)*	44 *(6.7)*	28.99 *(97.88)*
MAXIMUM POWER IN SELECTED GEARS											
180.67 *(134.72)*	31624 *(140.67)*	2.14 *(3.45)*	1987	14.76	4th (1D) Gear			183 *(83.9)*	44 *(6.7)*	48 *(8.9)*	28.81 *(97.29)*
190.57 *(142.11)*	28935 *(128.71)*	2.47 *(3.97)*	1900	10.20	5th (2A) Gear			184 *(84.4)*	47 *(8.3)*	51 *(10.6)*	28.81 *(97.29)*
196.20 *(146.31)*	25730 *(114.45)*	2.86 *(4.60)*	1900	7.66	6th (2B) Gear			184 *(84.4)*	49 *(9.4)*	53 *(11.7)*	28.82 *(97.32)*
198.88 *(148.30)*	22744 *(101.17)*	3.28 *(5.28)*	1901	6.38	7th (2C) Gear			186 *(185.3)*	51 *(10.6)*	55 *(12.8)*	28.84 *(97.39)*
202.24 *(150.81)*	20208 *(89.89)*	3.75 *(6.04)*	1900	4.82	8th (2D) Gear			185 *(84.7)*	44 *(6.7)*	50 *(10.0)*	28.82 *(97.32)*
202.31 *(150.86)*	17847 *(79.39)*	4.25 *(6.84)*	1900	4.18	9th (3A) Gear			185 *(85.0)*	44 *(6.7)*	50 *(10.0)*	28.88 *(97.52)*
203.31 *(151.61)*	15829 *(70.41)*	4.82 *(7.75)*	1900	3.62	10th (3B) Gear			185 *(85.0)*	43 *(6.1)*	50 *(10.0)*	28.92 *(97.66)*
201.85 *(150.52)*	13851 *(61.61)*	5.46 *(8.79)*	1901	3.21	11th (3C) Gear			185 *(85.0)*	44 *(6.7)*	50 *(10.0)*	28.87 *(97.49)*
200.79 *(149.73)*	12177 *(54.17)*	6.18 *(9.95)*	1901	2.71	12th (3D) Gear			186 *(85.3)*	44 *(6.7)*	51 *(10.6)*	28.87 *(97.49)*
199.84 *(149.02)*	10476 *(46.60)*	7.15 *(11.51)*	1899	2.30	13th (4A) Gear			186 *(85.3)*	45 *(7.2)*	51 *(10.6)*	28.85 *(97.42)*
197.19 *(147.04)*	9144 *(40.67)*	8.09 *(13.01)*	1900	1.96	14th (4B) Gear			185 *(84.7)*	45 *(7.2)*	51 *(10.6)*	28.84 *(97.39)*

DRAWBAR PERFORMANCE AT 1700 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling med	Air wet bulb	Air dry bulb	
Maximum Available Power — Two Hours 10th (3B) Gear											
198.75 *(148.21)*	17396 *(77.38)*	4.28 *(6.89)*	1700	4.18	11.380 *(43.077)*	0.399 *(0.243)*	17.47 *(3.441)*	188 *(86.4)*	44 *(6.7)*	51 *(10.3)*	28.98 *(97.86)*
MAXIMUM POWER IN SELECTED GEARS											
179.83 *(134.10)*	31203 *(138.80)*	2.16 *(3.48)*	1752	14.82	5th (2A) Gear			186 *(85.3)*	48 *(8.9)*	52 *(11.1)*	28.81 *(97.29)*
190.40 *(141.98)*	28531 *(126.91)*	2.50 *(4.03)*	1699	9.78	6th (2B) Gear			187 *(85.8)*	50 *(10.0)*	54 *(12.2)*	28.83 *(97.35)*
196.18 *(146.29)*	25371 *(112.86)*	2.90 *(4.67)*	1701	7.51	7th (2C) Gear			185 *(85.0)*	51 *(10.6)*	56 *(13.3)*	28.84 *(97.39)*
198.48 *(148.00)*	22362 *(99.47)*	3.33 *(5.36)*	1698	5.45	8th (2D) Gear			187 *(85.8)*	44 *(6.7)*	50 *(10.0)*	28.82 *(97.32)*
200.46 *(149.48)*	19883 *(88.44)*	3.78 *(6.08)*	1700	4.90	9th (3A) Gear			188 *(86.4)*	44 *(6.7)*	50 *(10.0)*	28.88 *(97.52)*
202.70 *(151.15)*	17722 *(78.83)*	4.29 *(6.90)*	1701	4.10	10th (3B) Gear			188 *(86.4)*	43 *(6.1)*	50 *(10.0)*	28.91 *(97.62)*
201.84 *(150.51)*	15536 *(69.11)*	4.87 *(7.84)*	1701	3.62	11th (3C) Gear			187 *(86.1)*	44 *(6.7)*	51 *(10.6)*	28.87 *(97.49)*
201.10 *(149.96)*	13687 *(60.88)*	5.51 *(8.87)*	1700	3.04	12th (3D) Gear			189 *(86.9)*	44 *(6.7)*	51 *(10.6)*	28.86 *(97.46)*
200.97 *(149.86)*	11807 *(52.52)*	6.38 *(10.27)*	1699	2.71	13th (4A) Gear			188 *(86.7)*	45 *(7.2)*	51 *(10.6)*	28.84 *(97.39)*
199.68 *(148.90)*	10369 *(46.12)*	7.22 *(11.62)*	1701	2.46	14th (4B) Gear			187 *(86.1)*	45 *(7.2)*	51 *(10.6)*	28.83 *(97.35)*
195.74 *(145.96)*	8978 *(39.93)*	8.18 *(13.16)*	1700	2.05	15th (4C) Gear			186 *(85.6)*	45 *(7.2)*	51 *(10.6)*	28.83 *(97.35)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 121°F *(49.4°C)*. Twelve gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1542**, December 3, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

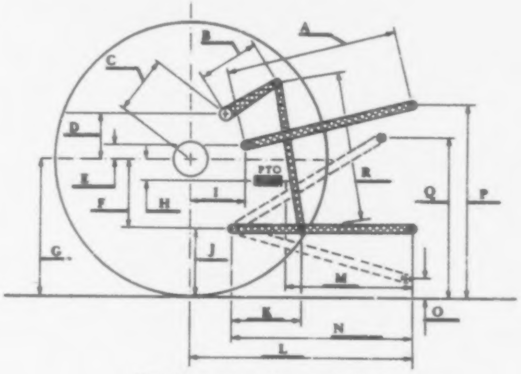
K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., Size, ply & psi *(kPa)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	1552 lb *(704 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., Size, ply & psi *(kPa)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	1163 lb *(527 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		18.5 in *(470 mm)*	18.5 in *(470 mm)*
Static Weight with Operator	—Rear	15105 lb *(6852 kg)*	12000 lb *(5443 kg)*
	—Front	18725 lb *(8493 kg)*	16400 lb *(7439 kg)*
	—Total	33830 lb *(15345 kg)*	28400 lb *(12882 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2400	*16550*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	108	*42*	
Location	hydraulic reservoir		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	13460	*6105*	
TIME sec	3.56		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	13.6	*346*	
Top of timed range	39.6	*1006*	
Highest position	40.1	*1019*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.0	*330*	
Top of timed range	42.0	*1067*	
Highest position	42.5	*1080*	

*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.3	*794*
B	15.0	*381*
C	26.8	*681*
D	22.3	*566*
E	5.7	*145*
F	13.5	*343*
G	32.4	*822*
H	NA	*NA*
I	18.1	*460*
J	18.9	*479*
K	15.0	*381*
L	50.1	*1273*
L'	56.6	*1438*
M	NA	*NA*
N	32.0	*813*
O	8.0	*203*
P	40.9	*1038*
Q	36.1	*918*
R	34.3	*870*

L' to end of quick attach

Steiger Panther IV KM-325 Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1550—STEIGER PANTHER IV SM-325 DIESEL 20 SPEED

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling med	Air wet bulb	Air dry bulb	
Maximum Available Power — Two Hours 10th (3B) Gear											
270.89 *(202.00)*	14996 *(66.71)*	6.77 *(10.90)*	2100	3.52	15.825 *(59.905)*	0.407 *(0.248)*	17.12 *(3.372)*	177 *(80.3)*	38 *(3.3)*	44 *(6.7)*	29.36 *(99.13)*
75% of Pull at Maximum Power — Ten Hours 10th (3B) Gear											
219.76 *(163.88)*	11507 *(51.19)*	7.16 *(11.53)*	2198	2.49	13.749 *(52.045)*	0.436 *(0.265)*	15.98 *(3.149)*	176 *(79.9)*	31 *(-0.8)*	35 *(1.8)*	29.23 *(98.70)*
50% of Pull at Maximum Power — Two Hours 10th (3B) Gear											
149.43 *(111.43)*	7680 *(34.16)*	7.30 *(11.74)*	2274	1.73	10.512 *(39.792)*	0.491 *(0.298)*	14.22 *(2.800)*	173 *(78.3)*	41 *(4.7)*	48 *(8.6)*	29.28 *(98.87)*
50% of Pull at Reduced Engine Speed — Two Hours 14th (4B) Gear											
150.05 *(111.89)*	7677 *(34.15)*	7.33 *(11.80)*	1349	1.69	8.963 *(33.929)*	0.417 *(0.253)*	16.74 *(3.298)*	174 *(78.9)*	33 *(0.3)*	39 *(3.6)*	29.41 *(99.30)*
MAXIMUM POWER IN SELECTED GEARS											
239.71 *(178.76)*	33651 *(149.68)*	2.67 *(4.30)*	2171	14.25	3rd (1C) Gear			176 *(79.7)*	36 *(2.2)*	43 *(6.1)*	29.36 *(99.14)*
256.58 *(191.33)*	31890 *(141.85)*	3.02 *(4.86)*	2099	11.19	4th (1D) Gear			176 *(80.0)*	36 *(2.2)*	43 *(6.1)*	29.36 *(99.14)*
268.10 *(199.92)*	28224 *(125.54)*	3.56 *(5.73)*	2101	7.82	5th (2A) Gear			177 *(80.3)*	36 *(2.2)*	43 *(6.1)*	29.36 *(99.14)*
272.73 *(203.37)*	25139 *(111.82)*	4.07 *(6.55)*	2101	6.57	6th (2B) Gear			176 *(80.0)*	36 *(2.2)*	43 *(6.1)*	29.36 *(99.14)*
274.67 *(204.82)*	22028 *(97.99)*	4.68 *(7.52)*	2099	5.43	7th (2C) Gear			177 *(80.3)*	36 *(2.2)*	44 *(6.7)*	29.35 *(99.11)*
274.93 *(205.02)*	19400 *(86.30)*	5.31 *(8.55)*	2101	4.58	8th (2D) Gear			176 *(80.0)*	35 *(1.7)*	42 *(5.6)*	29.34 *(99.08)*
278.03 *(207.33)*	17427 *(77.52)*	5.98 *(9.63)*	2098	3.80	9th (3A) Gear			177 *(80.6)*	40 *(4.4)*	48 *(8.9)*	29.30 *(98.94)*
278.09 *(207.37)*	15380 *(68.41)*	6.78 *(10.91)*	2101	3.48	10th (3B) Gear			177 *(80.6)*	39 *(3.9)*	47 *(8.3)*	29.32 *(99.01)*
275.33 *(205.31)*	13356 *(59.41)*	7.73 *(12.44)*	2098	2.92	11th (3C) Gear			177 *(80.3)*	41 *(5.0)*	49 *(9.4)*	29.29 *(98.91)*
273.53 *(203.97)*	11728 *(52.17)*	8.75 *(14.08)*	2099	2.43	12th (3D) Gear			176 *(80.0)*	41 *(5.0)*	50 *(10.0)*	29.28 *(98.87)*

LUGGING ABILITY IN 10th (3B) GEAR

Crankshaft Speed rpm	2101	1889	1680	1476	1256	1048
Pull—lbs (kN)	15380 *(68.41)*	16753 *(74.52)*	18682 *(83.10)*	20218 *(89.93)*	20190 *(89.81)*	18703 *(83.20)*
Increase in Pull %	0	9	21	31	31	22
Power—Hp (kW)	278.09 *(207.37)*	271.37 *(202.36)*	267.91 *(199.78)*	253.49 *(189.02)*	215.35 *(160.59)*	167.22 *(124.70)*
Speed—Mph (km/h)	6.78 *(10.91)*	6.07 *(9.78)*	5.38 *(8.65)*	4.70 *(7.57)*	4.00 *(6.44)*	3.35 *(5.40)*
Slip %	3.48	3.80	4.27	4.58	4.74	4.27

TRACTOR SOUND LEVEL WITH CAB	1700 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	77.0	79.0	80.5
75% of Pull at Maximum Power—Ten Hours			81.5
50% of Pull at Maximum Power—Two Hours			81.0
50% of Pull at Reduced Engine Speed—Two Hours			75.0
Bystander in 18th (5B) gear			100.0

Department of Agricultural Engineering

Dates of Test: November 16 to 26, 1984

Manufacturer: STEIGER TRACTOR, INC., 406 Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity (converted to 60/60°F** *(15/15°C)* 0.8375 **Fuel weight** 6.973 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE-SF, CC-CD **To motor** 6.556 gal *(24.818 l)* **Drained from motor** 5.885 gal *(22.276 l)* **Transmission and hydraulic lubricant** SAE 10 hydraulic oil **Final drive lubricant** SAE 80W-90 **Total time engine was operated** 39.5 hours.

ENGINE: Make Komatsu Diesel **Model** SA6D125-4 **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 11296 **Crankshaft** lengthwise **Rated rpm** 1700 to 2100 **Bore and stroke** 4.921" × 5.906" *(125 mm × 150 mm)* **Compression ratio** 14.5 to 1 **Displacement** 674 cu in *(11045 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission and transfer case oil **Fuel filter** one paper cartridge and water separator **Muffler** none **Cooling medium temperature control** two thermostats.

CHASSIS: Type four wheel drive with duals **Serial No.** 119- 04028 **Tread width** rear 79" *(2007 mm)* to 136.3" *(3462 mm)* front 79" *(2007 mm)* to 136.3" *(3462 mm)* **Wheel base** 129" *(3277 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 76.0" *(1930 mm)* Vertical distance above roadway 45.5" *(1156 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 2.3 *(3.7)* second 2.6 *(4.2)* third 3.0 *(4.8)* fourth 3.4 *(5.5)* fifth 3.8 *(6.1)* sixth 4.3 *(6.9)* seventh 4.9 *(7.9)* eighth 5.5 *(8.8)* ninth 6.1 *(9.8)* tenth 7.0 *(11.3)* eleventh 7.8 *(12.5)* twelfth 8.9 *(14.3)* thirteenth 10.2 *(16.4)* fourteenth 11.5 *(18.5)* fifteenth 13.0 *(20.9)* sixteenth 14.8 *(23.8)* seventeenth 15.8 *(25.4)* eighteenth 18.0 *(29.0)* nineteenth 20.3 *(32.7)* twentieth 23.1 *(37.2)* reverse 2.3 *(3.7)*, 2.6 *(4.2)*, 3.0 *(4.8)*, 3.4 *(5.5)* **Clutch** dual dry disc hydraulically operated by foot pedal **Brakes** dual caliper, single disc hydraulically actuated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 283" *(7.19 m)* left 288" *(7.32 m)* **Turning space diameter** (on

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Temp. °F (°C) Air wet bulb	Temp. °F (°C) Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 10th (3B) Gear											
268.18 *(199.99)*	16434 *(73.10)*	6.12 *(9.85)*	1901	3.60	15.252 *(57.734)*	0.397 *(0.241)*	17.58 *(3.464)*	176 *(80.0)*	39 *(3.9)*	41 *(5.0)*	28.94 *(97.71)*
MAXIMUM POWER IN SELECTED GEARS											
244.93 *(182.64)*	33487 *(148.96)*	2.74 *(4.41)*	1908	14.57	4th (1D) Gear			176 *(80.0)*	36 *(2.2)*	43 *(6.1)*	29.36 *(99.14)*
256.53 *(191.30)*	30388 *(135.17)*	3.17 *(5.09)*	1899	9.18	5th (2A) Gear			176 *(79.7)*	36 *(2.2)*	43 *(6.1)*	29.36 *(99.14)*
263.29 *(196.34)*	27124 *(120.65)*	3.64 *(5.86)*	1898	7.51	6th (2B) Gear			176 *(79.7)*	36 *(2.2)*	44 *(6.7)*	29.36 *(99.14)*
264.94 *(197.57)*	23619 *(105.06)*	4.21 *(6.77)*	1901	5.97	7th (2C) Gear			176 *(80.0)*	36 *(2.2)*	43 *(6.1)*	29.35 *(99.11)*
268.67 *(200.35)*	21057 *(93.67)*	4.78 *(7.70)*	1901	5.12	8th (2D) Gear			176 *(80.0)*	34 *(1.1)*	41 *(5.0)*	29.34 *(99.08)*
269.67 *(201.09)*	18734 *(83.33)*	5.40 *(8.69)*	1900	4.27	9th (3A) Gear			177 *(80.6)*	40 *(4.4)*	48 *(8.9)*	29.30 *(98.94)*
270.09 *(201.41)*	16571 *(73.71)*	6.11 *(9.84)*	1899	3.60	10th (3B) Gear			177 *(80.5)*	40 *(4.4)*	48 *(8.9)*	29.31 *(98.98)*
269.53 *(200.99)*	14489 *(64.45)*	6.98 *(11.23)*	1898	3.24	11th (3C) Gear			177 *(80.5)*	41 *(5.0)*	49 *(9.4)*	29.29 *(98.91)*
267.96 *(199.82)*	12706 *(56.52)*	7.91 *(12.73)*	1902	2.68	12th (3D) Gear			176 *(79.7)*	41 *(5.0)*	50 *(10.0)*	29.28 *(98.87)*
264.07 *(196.92)*	10886 *(48.42)*	9.10 *(14.64)*	1900	2.35	13th (4A) Gear			176 *(80.0)*	41 *(5.0)*	50 *(10.0)*	29.28 *(98.87)*

DRAWBAR PERFORMANCE AT 1700 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crankshaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Temp. °F (°C) Air wet bulb	Temp. °F (°C) Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 10th (3B) Gear											
255.92 *(190.29)*	18334 *(81.55)*	5.44 *(8.75)*	1680	4.19	14.707 *(55.671)*	0.386 *(0.235)*	18.08 *(3.562)*	176 *(80.0)*	41 *(4.7)*	44 *(6.7)*	28.91 *(97.63)*
MAXIMUM POWER IN SELECTED GEARS											
240.15 *(179.08)*	33535 *(149.17)*	2.69 *(4.32)*	1709	14.44	5th (2A) Gear			176 *(80.0)*	36 *(2.2)*	43 *(6.1)*	29.36 *(99.14)*
256.27 *(191.10)*	29957 *(133.25)*	3.21 *(5.16)*	1705	8.97	6th (2B) Gear			176 *(79.7)*	36 *(2.2)*	44 *(6.7)*	29.35 *(99.11)*
259.99 *(193.88)*	26209 *(116.58)*	3.72 *(5.99)*	1699	6.94	7th (2C) Gear			176 *(80.0)*	36 *(2.2)*	43 *(6.1)*	29.35 *(99.11)*
264.09 *(196.93)*	23336 *(103.80)*	4.24 *(6.83)*	1699	5.82	8th (2D) Gear			176 *(80.0)*	34 *(1.1)*	41 *(5.0)*	29.34 *(99.08)*
267.10 *(199.17)*	20872 *(92.84)*	4.80 *(7.72)*	1700	4.82	9th (3A) Gear			176 *(80.0)*	40 *(4.4)*	48 *(8.9)*	29.29 *(98.91)*
268.68 *(200.36)*	18530 *(82.42)*	5.44 *(8.75)*	1699	4.27	10th (3B) Gear			176 *(80.0)*	40 *(4.4)*	48 *(8.9)*	29.31 *(98.98)*
266.86 *(199.00)*	16075 *(71.49)*	6.23 *(10.02)*	1701	3.40	11th (3C) Gear			176 *(80.0)*	41 *(5.0)*	49 *(9.4)*	29.29 *(98.91)*
264.60 *(197.33)*	14115 *(62.78)*	7.04 *(11.33)*	1698	3.08	12th (3D) Gear			176 *(80.0)*	41 *(5.0)*	50 *(10.0)*	29.28 *(98.87)*
263.61 *(196.57)*	12175 *(54.15)*	8.12 *(13.07)*	1701	2.76	13th (4A) Gear			176 *(79.7)*	41 *(5.0)*	50 *(10.0)*	29.28 *(98.87)*

concrete surface without brake) right 590" *(14.99 m)* left 600" *(15.24 m)* **Power take-off** none **Unladen tractor mass** 28725 lb *(13030 kg)*.

REPAIRS AND ADJUSTMENTS: During the warm-up for the initial drawbar test run, coolant was detected in the No. 3 cylinder. The injector cap screws had inadequate torque. Gaskets were replaced and the test continued.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 114°F *(45.6°C)*. Ten gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. 1550, December 10, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

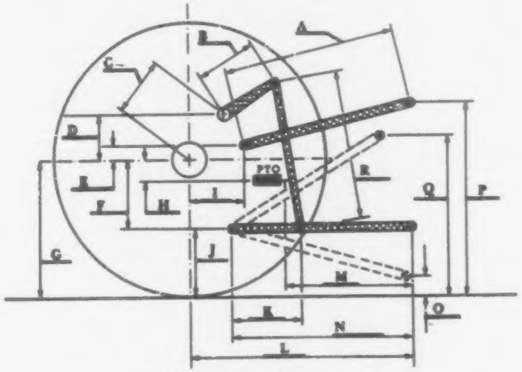
K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., Size, ply & psi *(kPa)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	1215 lb *(551 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., Size, ply & psi *(kPa)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*	Four 23.1-34; 8; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	1300 lb *(590 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		17.5 in *(445 mm)*	17.5 in *(445 mm)*
Static Weight with Operator	—Rear	14210 lb *(6446 kg)*	11780 lb *(5343 kg)*
	—Front	19720 lb *(8945 kg)*	17120 lb *(7766 kg)*
	—Total	33930 lb *(15391 kg)*	28900 lb *(13109 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2450	*16890*	
Location	remote		
Hydraulic oil temperature °F *(°C)*	101	*38*	
Location	hydraulic reservoir		
	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	13088	*5914*	
TIME sec	3.72		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	13.1	*333*	
Top of timed range	39.1	*994*	
Highest position	40.0	*1016*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.0	*330*	
Top of timed range	42.4	*1078*	
Highest position	43.5	*1105*	

*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	mm
A	30.8	*781*
B	15.0	*381*
C	26.8	*681*
D	22.3	*566*
E	5.7	*145*
F	13.5	*343*
G	32.0	*813*
H	NA	*NA*
I	18.1	*460*
J	18.5	*470*
K	15.0	*381*
L	50.1	*1273*
L'	56.6	*1438*
M	NA	*NA*
N	32.0	*813*
O	8.0	*203*
P	40.5	*1029*
Q	36.0	*914*
R	34.0	*864*

L' to end of quick attach

Steiger Panther IV SM-325 Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1544—STEIGER PANTHER IV CM-360 DIESEL 20 SPEED

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 10th (3B) Gear											
315.12 (234.99)	17573 (78.17)	6.72 (10.82)	2099	4.39	19.748 (74.753)	0.437 (0.266)	15.96 (3.144)	185 (85.0)	46 (7.8)	47 (8.3)	28.88 (97.53)
75% of Pull at Maximum Power — Ten Hours 10th (3B) Gear											
255.29 (190.37)	13571 (60.37)	7.05 (11.35)	2175	3.22	16.849 (63.781)	0.460 (0.280)	15.15 (2.985)	186 (85.6)	40 (4.7)	48 (8.9)	29.31 (98.97)
50% of Pull at Maximum Power — Two Hours 10th (3B) Gear											
171.96 (128.23)	8967 (39.89)	7.19 (11.57)	2186	2.27	12.943 (48.996)	0.525 (0.319)	13.29 (2.617)	181 (82.8)	40 (4.2)	45 (6.9)	29.24 (98.74)
50% of Pull at Reduced Engine Speed — Two Hours 14th (4B) Gear											
171.80 (128.11)	8966 (39.88)	7.19 (11.56)	1525	2.10	10.605 (40.145)	0.430 (0.262)	16.20 (3.191)	184 (84.2)	42 (5.6)	48 (8.9)	29.26 (98.79)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
285.06 (212.58)	32328 (143.80)	3.31 (5.32)	2100	14.97	5th (2A) Gear	184 (84.4)	37 (2.8)	40 (4.4)	29.12 (98.33)
307.87 (229.58)	29281 (130.25)	3.94 (6.35)	2099	9.63	6th (2B) Gear	185 (85.1)	42 (5.6)	53 (11.7)	29.29 (98.90)
315.17 (235.03)	25525 (113.54)	4.60 (7.40)	2099	7.25	7th (2C) Gear	186 (85.6)	45 (7.2)	54 (12.2)	29.25 (98.80)
320.44 (238.95)	22878 (101.76)	5.25 (8.45)	2099	5.90	8th (2D) Gear	188 (86.6)	46 (7.8)	55 (12.8)	29.20 (98.60)
325.84 (242.99)	20485 (91.11)	5.95 (9.56)	2100	5.06	9th (3A) Gear	182 (83.3)	46 (7.8)	55 (12.8)	29.20 (98.60)
324.84 (242.24)	18102 (80.52)	6.73 (10.83)	2100	4.43	10th (3B) Gear	183 (83.9)	44 (6.7)	52 (11.1)	29.23 (98.71)
322.29 (240.33)	15707 (69.87)	7.69 (12.38)	2099	5.72	11th (3C) Gear	183 (83.9)	44 (6.7)	53 (11.7)	29.22 (98.67)
320.57 (238.90)	13788 (61.33)	8.71 (14.02)	2099	5.16	12th (3D) Gear	183 (83.9)	45 (7.2)	54 (12.2)	29.21 (98.64)

LUGGING ABILITY IN 10th (3B) GEAR

Crankshaft Speed rpm	2100	1881	1679	1466	1250	1049
Pull—lbs (kN)	18102 (80.52)	20964 (93.25)	22569 (100.39)	23660 (105.24)	24269 (107.95)	23081 (102.67)
Increase in Pull %	0	16	25	31	34	28
Power—Hp (kW)	324.84 (242.24)	333.64 (248.80)	319.55 (238.14)	290.37 (216.49)	253.00 (188.66)	201.55 (150.19)
Speed—Mph (km/h)	6.73 (10.83)	5.97 (9.60)	5.30 (8.51)	4.60 (7.40)	3.91 (6.29)	3.27 (5.26)
Slip %	4.43	5.57	5.82	6.43	6.88	6.43

TRACTOR SOUND LEVEL WITH CAB	1700 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	79.0	78.5	78.5
75% of Pull at Maximum Power—Ten Hours			79.0
50% of Pull at Maximum Power—Two Hours			78.5
50% of Pull at Reduced Engine Speed—Two Hours			76.0
Bystander in 19th (5C) gear			102.0

Department of Agricultural Engineering

Dates of Test: October 13 to 24, 1984

Manufacturer: STEIGER TRACTOR, INC. 406 Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.8 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8375 **Fuel weight** 6.973 lbs/gal *(0.836 kg/l)* **Oil SAE** 10W-30 **API service classification** SE-SF, CC-CD **To motor** 7.941 gal *(30.059 l)* **Drained from motor** 6.879 gal *(26.040 l)* **Transmission and hydraulic lubricant** SAE 10 hydraulic oil **Final drive lubricant** SAE 80W-90 **Total time engine was operated** 38.0 hours.

ENGINE: Make Caterpillar Diesel **Type** six cylinder with turbocharger and intercooler **Serial No.** 6TB01109 **Crankshaft** lengthwise **Rated rpm** 1700 to 2100 **Bore and stroke** 5.4" × 6.5" *(137 mm × 165 mm)* **Compression ratio** 14.5 to 1 **Displacement** 893 cu in *(14636 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow paper cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic oil, radiator for transmission and transfer case oil **Fuel filter** one paper cartridge and prestrainer **Muffler** none **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 115-05418 **Tread width** rear 79" *(2007 mm)* to 136.3" *(3462 mm)* front 79" *(2007 mm)* to 136.3" *(3462 mm)* **Wheel base** 129" *(3277 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 79.1" *(2010 mm)* Vertical distance above roadway 45.5" *(1156 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 2.3 *(3.7)* second 2.6 *(4.2)* third 3.0 *(4.8)* fourth 3.4 *(5.5)* fifth 3.8 *(6.1)* sixth 4.3 *(6.9)* seventh 4.9 *(7.9)* eighth 5.5 *(8.8)* ninth 6.1 *(9.8)* tenth 7.0 *(11.3)* eleventh 7.8 *(12.5)* twelfth 8.9 *(14.3)* thirteenth 10.2 *(16.4)* fourteenth 11.5 *(18.5)* fifteenth 13.0 *(20.9)* sixteenth 14.8 *(23.8)* seventeenth 15.8 *(25.4)* eighteenth 18.0 *(29.0)* nineteenth 20.3 *(32.7)* twentieth 23.1 *(37.2)* reverse 2.3 *(3.7)*, 2.6 *(4.2)*, 3.0 *(4.8)*, 3.4 *(5.5)* **Clutch** dual dry disc hydraulically operated by foot pedal **Brakes** dual caliper, single disc hydraulically actuated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 283" *(7.19 m)* left 288" *(7.32 m)* **Turning space diameter** (on

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 10th (3B) Gear											
324.32 (241.85)	20162 (89.68)	6.03 (9.71)	1899	5.23	19.805 (74.970)	0.420 (0.256)	16.38 (3.226)	184 (84.4)	52 (11.1)	57 (13.9)	28.83 (97.63)
MAXIMUM POWER IN SELECTED GEARS											
301.24 (224.64)	32320 (143.76)	3.50 (5.63)	1970	14.66	6th (2B) Gear			185 (85.0)	39 (3.9)	44 (6.7)	29.13 (98.65)
314.50 (234.52)	29006 (129.03)	4.07 (6.54)	1901	9.49	7th (2C) Gear			185 (85.0)	45 (7.2)	53 (11.7)	29.20 (98.88)
321.48 (239.73)	25720 (114.41)	4.69 (7.54)	1901	7.32	8th (2D) Gear			185 (85.0)	45 (7.2)	54 (12.2)	29.20 (98.88)
332.50 (247.95)	23485 (104.46)	5.31 (8.55)	1900	6.13	9th (3A) Gear			185 (85.0)	46 (7.8)	55 (12.8)	29.29 (99.19)
334.37 (249.34)	20796 (92.51)	6.03 (9.70)	1898	5.21	10th (3B) Gear			184 (84.4)	44 (6.7)	53 (11.7)	29.22 (98.95)
332.89 (248.24)	19049 (84.73)	6.92 (11.13)	1900	4.45	11th (3C) Gear			184 (84.4)	44 (6.7)	53 (11.7)	29.21 (98.92)
333.45 (248.66)	15950 (70.95)	7.85 (12.63)	1902	3.80	12th (3D) Gear			184 (84.4)	45 (7.2)	54 (12.2)	29.21 (98.92)
330.24 (246.26)	13709 (60.98)	9.03 (14.54)	1898	3.32	13th (4A) Gear			184 (84.4)	46 (7.8)	55 (12.8)	29.20 (98.88)

DRAWBAR PERFORMANCE AT 1700 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 10th (3B) Gear											
314.38 (234.43)	22007 (97.89)	5.36 (8.62)	1700	5.86	18.909 (71.577)	0.419 (0.255)	16.63 (3.277)	184 (84.4)	53 (11.7)	54 (12.2)	28.92 (97.93)
MAXIMUM POWER IN SELECTED GEARS											
298.85 (222.85)	32299 (143.67)	3.47 (5.58)	1965	14.97	6th (2B) Gear			185 (85.0)	38 (3.3)	42 (5.6)	29.13 (98.65)
297.10 (221.55)	31725 (141.12)	3.51 (5.65)	1699	12.49	7th (2C) Gear			185 (85.0)	39 (3.9)	45 (7.2)	29.13 (98.65)
306.23 (228.36)	27854 (123.90)	4.13 (6.64)	1698	8.65	8th (2D) Gear			185 (85.0)	45 (7.2)	54 (12.2)	29.20 (98.88)
316.40 (235.94)	25211 (112.14)	4.71 (7.57)	1701	6.95	9th (3A) Gear			184 (84.4)	46 (7.8)	55 (12.8)	29.20 (98.88)
322.14 (240.22)	22539 (100.25)	5.36 (8.63)	1698	5.42	10th (3B) Gear			185 (85.0)	44 (6.7)	53 (11.7)	29.22 (98.95)
322.36 (240.38)	19638 (87.35)	6.16 (9.91)	1699	4.73	11th (3C) Gear			184 (84.4)	45 (7.2)	54 (12.2)	29.21 (98.92)
322.31 (240.35)	17295 (76.93)	6.99 (11.25)	1700	4.29	12th (3D) Gear			184 (84.4)	45 (7.2)	54 (12.2)	29.20 (98.88)
324.35 (241.87)	15069 (67.03)	8.07 (12.99)	1702	3.56	13th (4A) Gear			184 (84.4)	46 (7.8)	55 (12.8)	29.20 (98.88)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., Size, ply & psi (kPa)	Four 25.1-34; 8; inner 14 (95) outer 12 (83)	Four 25.1-34; 8; inner 14 (95) outer 12 (83)
Ballast	—Liquid (each tire)	1275 lb (578 kg)	None
	—Cast iron (each)	None	None
Front Tires	—No., Size, ply & psi (kPa)	Four 25.1-34; 8; inner 14 (95) outer 12 (83)	Four 25.1-34; 8; inner 14 (95) outer 12 (83)
Ballast	—Liquid (each tire)	632 lb (287 kg)	None
	—Cast iron (each)	None	None
Height of Drawbar		18.5 in (470 mm)	18.5 in (470 mm)
Static Weight with Operator	—Rear	14115 lb (6402 kg)	11565 lb (5246 kg)
	—Front	19625 lb (8902 kg)	18360 lb (8328 kg)
	—Total	33740 lb (15304 kg)	29925 lb (13574 kg)

concrete surface without brakes) right 49.2' (*14.99 m*) left 50.0' (*15.24 m*). **Power take-off** none. **Unladen tractor mass** 29750 lb (*13495 kg*)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 132°F (*55.6°C*). Eight gears were chosen between 15% slip and 10 mph (*16.1 km/h*).

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1544**, December 5, 1984.

LOUIS I. LEVITICUS
Engineer-in-Charge

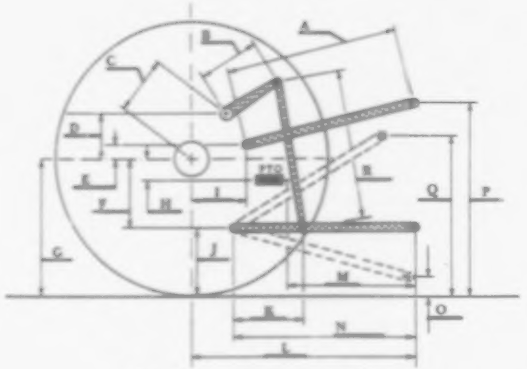
K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2400	16550	
Location	remote		
Hydraulic oil temperature °F (°C)	125	51	
Location	hydraulic reservoir		

	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs (kg)	13320	6042	
TIME sec	5.80		
HITCH POINT MOVEMENT in (mm)			
Lowest position	14.1	358	
Top of timed range	40.1	1019	
Highest position	40.4	1026	
LOAD CG MOVEMENT in (mm)			
Lowest position	13.5	343	
Top of timed range	42.6	1082	
Highest position	43.0	1092	

*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	mm
A	31.4	*797*
B	15.0	*381*
C	26.8	*681*
D	22.3	*566*
E	5.7	*145*
F	13.5	*343*
G	31.9	*810*
H	NA	*NA*
I	18.1	*460*
J	18.4	*467*
K	15.0	*381*
L	50.1	*1273*
L'	56.6	*1438*
M	NA	*NA*
N	32.0	*813*
O	8.0	*203*
P	40.4	*1026*
Q	35.9	*911*
R	34.0	*864*

L' to end of quick attach

NEBRASKA TRACTOR TEST 1565—VERSATILE 276 DIESEL HYDROSTATIC

Department of Agricultural Engineering

Dates of Test: May 2 to 15, 1985

Manufacturer: VERSATILE FARM EQUIPMENT COMPANY, 1260 Clarence Avenue, Winnipeg, Manitoba, Canada R3T 1T3

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.5 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8381 **Fuel weight** 6.978 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 2.880 gal *(10.902 l)* **Drained from motor** 2.232 gal *(8.448 l)* **Transmission and hydraulic lubricant** Versatile HyGear 25 **Final drive lubricant** SAE 85W90 **Hydrostatics fluid** Dexron-II ATF **Total time engine was operated** 41.5 hours.

ENGINE: Make Consolidated Diesel Corporation-Cummins Diesel **Type** four cylinder vertical with turbocharger and intercooler **Serial No.** 44119515 **Crankshaft** lengthwise **Rated rpm** 2500 **Bore and stroke** 4.02" × 4.72" *(102 mm × 120 mm)* **Compression ratio** 16.5 to 1 **Displacement** 239 cu in *(3921 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydrostatics oil **Fuel filter** two paper cartridges **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive **Serial No.** 276 85 241141 **Tread width** rear 63.4" *(1610 mm)* to 95.2" *(2418 mm)* front 63.4" *(1610 mm)* to 95.2" *(2418 mm)* **Wheel base** 86" *(2184 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 47.6" *(1210 mm)* Vertical distance above roadway 37" *(940 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** infinitely variable hydrostatic using a variable displacement pump and fixed displacement motor, plus a 3 speed manual transmission **Advertised speeds mph** *(km/h)* forward 0-5.9 *(0-9.5)*, 0-8.2 *(0-13.3)*, 0-19.1 *(0-30.8)* reverse 0-5.9 *(0-9.5)*, 0-8.2 *(0-13.3)*, 0-19.1 *(0-30.8)* **Clutch** none **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 173.8" *(4.41 m)* left 173.8" *(4.41 m)* **Turning space diameter** (on concrete surface without brake) right 362.8" *(9.21 m)* left 362.8" *(9.21 m)* **Power take-off** 540 rpm at 2448 engine rpm **Unladen tractor mass** 9020 lb *(4091 kg)*.

POWER TAKE-OFF PERFORMANCE

	Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
	MAXIMUM POWER AND FUEL CONSUMPTION								
	Rated Engine Speed — Two hours (PTO Speed—552 rpm)								
	100.22 (74.73)	2500	6.184 (23.408)	0.431 (0.262)	16.21 (3.193)	188 (86.7)	62 (16.9)	75 (23.9)	29.93 (97.77)
	Standard Power Take-off Speed (540 rpm) — One Hour								
	102.14 (76.16)	2448	6.191 (23.435)	0.425 (0.258)	16.50 (3.250)	188 (86.5)	62 (16.9)	75 (23.8)	28.90 (97.74)
	VARYING POWER AND FUEL CONSUMPTION — Two Hours								
	88.20 (65.77)	2589	5.709 (21.612)	0.452 (0.275)	15.45 (3.043)	189 (86.9)	63 (17.2)	76 (24.4)	
	0.00 (0.00)	2718	1.965 (7.437)			181 (82.5)	65 (18.3)	76 (24.4)	
	44.89 (33.47)	2659	3.719 (14.077)	0.578 (0.352)	12.07 (2.378)	190 (87.5)	62 (16.7)	76 (24.2)	
	100.45 (74.91)	2500	6.182 (23.401)	0.429 (0.261)	16.25 (3.201)	188 (86.7)	63 (17.2)	77 (24.7)	
	22.74 (16.96)	2571	2.889 (10.936)	0.886 (0.539)	7.87 (1.551)	186 (85.3)	64 (17.8)	78 (25.6)	
	66.60 (49.66)	2604	4.643 (17.576)	0.486 (0.296)	14.34 (2.826)	195 (90.5)	64 (17.8)	78 (25.6)	
Av Av	**55.81** **(40.13)**	**2620**	**4.185** **(15.840)**	**0.545** **(0.330)**	**12.86** **(2.533)**	**188** **(86.5)**	**63** **(17.8)**	**77** **(24.8)**	**29.95** **97.26**

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 5.6 MPH 1st Range											
69.64 (51.93)	4658 (20.72)	5.61 (9.02)	2501	3.71	6.126 (23.190)	0.614 (0.373)	11.37 (2.239)	187 (86.1)	68 (19.7)	77 (25.0)	28.21 (95.35)
75% of Pull at Maximum Power — Ten Hours 5.6 MPH 1st Range											
56.19 (41.90)	3527 (15.69)	5.97 (9.61)	2595	2.78	5.480 (20.744)	0.681 (0.414)	10.25 (2.020)	190 (87.5)	64 (18.0)	71 (21.8)	28.60 (96.57)
50% of Pull at Maximum Power — Two Hours 5.6 MPH 1st Range											
38.73 (28.88)	2351 (10.46)	6.18 (9.94)	2610	1.78	4.486 (16.980)	0.808 (0.492)	8.63 (1.701)	195 (90.6)	71 (21.7)	85 (29.3)	28.82 (97.30)
50% of Pull at Reduced Engine Speed — Two Hours Speed Setting — 7.9 MPH 2nd Range at 2500 RPM											
38.74 (28.89)	2351 (10.46)	6.18 (9.95)	1901	1.75	3.497 (13.236)	0.630 (0.383)	11.08 (2.183)	188 (86.4)	71 (21.4)	83 (28.1)	28.77 (97.15)

Steiger Panther IV CM-360 Diesel

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

MAXIMUM POWER AT SELECTED SPEEDS

The infinitely variable drive control was set to give the travel speeds shown

55.89 (41.68)	7892 (35.11)	2.66 (4.27)	2504	7.85	1st Range	188 (86.7)	68 (20.0)	73 (22.8)	28.27 (95.73)
65.84 (49.09)	7692 (34.21)	3.21 (5.17)	2500	7.38	1st Range	190 (87.8)	68 (20.0)	73 (22.8)	28.29 (95.80)
67.01 (49.97)	7192 (31.99)	3.49 (5.62)	2498	7.03	1st Range	190 (87.8)	67 (19.4)	77 (25.0)	28.86 (97.73)
68.59 (51.14)	6473 (28.79)	3.97 (6.39)	2499	5.96	1st Range	190 (87.8)	67 (19.4)	76 (24.4)	*28.86 (97.73)
69.59 (51.89)	5832 (25.94)	4.47 (7.20)	2500	5.29	1st Range	190 (87.8)	67 (19.4)	76 (24.4)	28.87 (97.76)
70.70 (52.72)	5185 (23.06)	5.11 (8.23)	2498	4.23	1st Range	188 (86.7)	64 (17.8)	78 (25.6)	28.26 (95.70)
70.91 (52.88)	4742 (21.09)	5.61 (9.02)	2501	3.81	1st Range	188 (86.7)	65 (18.3)	79 (26.1)	28.25 (95.66)
69.71 (51.98)	4368 (19.43)	5.99 (9.63)	2500	3.49	2nd Range	190 (87.8)	67 (19.4)	77 (25.0)	28.85 (97.70)
69.85 (52.09)	4014 (17.85)	6.53 (10.50)	2500	3.50	2nd Range	190 (87.8)	68 (20.0)	78 (25.6)	28.85 (97.70)
70.38 (52.48)	3752 (16.69)	7.07 (11.38)	2499	3.05	2nd Range	189 (87.2)	68 (20.0)	78 (25.6)	28.84 (97.66)
69.33 (51.70)	3468 (15.42)	7.50 (12.07)	2500	2.79	2nd Range	190 (87.8)	68 (20.0)	79 (26.1)	28.84 (97.66)
68.42 (51.02)	3234 (14.38)	7.93 (12.77)	2501	2.55	2nd Range	190 (87.8)	68 (20.0)	79 (26.1)	28.85 (97.70)

LUGGING ABILITY FROM SPEED SETTING 5.8 MPH 1ST RANGE

Crankshaft Speed rpm	2501	2250	2001	1749	1500	1248
Pull—lbs (kN)	4742 (21.09)	5380 (23.93)	5897 (26.23)	6180 (27.49)	6317 (28.10)	5689 (25.31)
Increase in Pull %	0	13	24	30	33	20
Power—Hp (kW)	70.91 (52.88)	70.41 (52.50)	66.99 (49.95)	60.72 (45.28)	53.05 (39.56)	40.37 (30.11)
Speed—Mph (km/h)	5.61 (9.02)	4.91 (7.90)	4.26 (6.86)	3.68 (5.93)	3.15 (5.07)	2.66 (4.28)
Slip %	3.81	4.56	5.17	5.54	5.78	5.05

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	80.5
75% of Pull at Maximum Power—Ten Hours	81.0
50% of Pull at Maximum Power—Two Hours	79.5
50% of Pull at Reduced Engine Speed—Two Hours	80.0
Bystander in 3rd range	90.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Two 16.9-28; 6; 18 (124)	Two 16.9-28; 6; 18 (124)
Ballast	—Liquid (each)	200 lb (91 kg)	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi (kPa)	Two 16.9-28; 6; 18 (124)	Two 16.9-28; 6; 18 (124)
Ballast	—Liquid (each)	455 lb (206 kg)	None
	—Cast Iron (each)	None	None
Height of Drawbar		18 in (457 mm)	18 in (457 mm)
Static Weight with Operator	—Rear	4650 lb (2109 kg)	4200 lb (1905 kg)
	—Front	5860 lb (2658 kg)	5000 lb (2268 kg)
	—Total	10510 lb (4767 kg)	9200 lb (4173 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 135°F *(56.4°C)*. Twelve travel speeds were chosen up to 10 mph *(16.1 km/h)*. The pull in the 1st range was limited by the setting of the hydrostatic transmission pressure relief valve.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1565**, June 21, 1985.

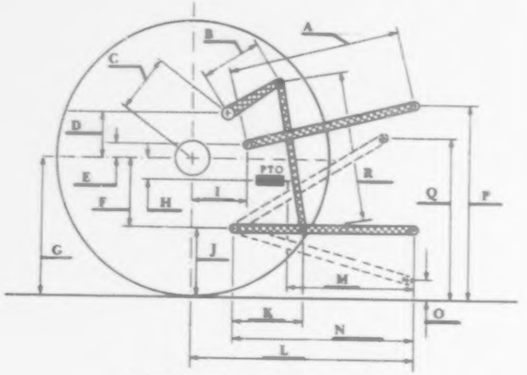
LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	** 3000	*(20680)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	121	*(49)*	
Location	pump outlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	4408	*(1999)*	
TIME sec	0.81		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	9.8	*(249)*	
Top of timed range	33.9	*(861)*	
Highest position	36.8	*(935)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.8	*(300)*	
Top of timed range	35.0	*(889)*	
Highest position	39.0	*(991)*	

*Implement load capacity for transport purposes not specified by manufacturer.
** The observed maximum pressure was outside the range specified by the manufacturer: 2700-2900 psi *(18620-20000 kPa)*



Hitch Dimensions as Tested — No Load

	inch	mm
A	21.9	*556*
B	12.4	*315*
C	20.4	*519*
D	19.7	*500*
E	17.4	*441*
F	0.0	*0*
G	25.5	*648*
H	4.7	*119*
I	15.8	*401*
J	25.5	*648*
K	21.7	*550*
L	37.4	*950*
M	20.9	*531*
N	37.4	*950*
O	8.0	*203*
P	44.5	*1130*
Q	36.6	*930*
R	22.0	*559*

Versatile 276 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1566—VERSATILE 836 MANUAL DIESEL 15 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—1000 rpm)								
192.54 (143.58)	2100	10.870 (41.146)	0.394 (0.240)	17.71 (3.490)	180 (82.2)	65 (18.3)	75 (23.8)	28.97 (97.82)
Reduced Engine Speed — One Hour (PTO Speed—862 rpm)								
197.18 (147.03)	1799	10.416 (39.427)	0.369 (0.224)	18.93 (3.730)	182 (83.2)	66 (19.0)	75 (24.1)	28.83 (97.34)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
170.54 (127.17)	2187	10.196 (38.597)	0.417 (0.254)	16.73 (3.295)	179 (81.7)	67 (19.2)	75 (23.6)	—
0.00 (0.00)	2328	3.284 (12.432)	—	—	177 (80.6)	66 (18.9)	75 (23.9)	—
88.19 (65.76)	2262	7.093 (26.849)	0.561 (0.341)	12.43 (2.449)	178 (81.1)	67 (19.4)	76 (24.2)	—
192.77 (143.75)	2101	11.181 (42.321)	0.405 (0.246)	17.24 (3.396)	181 (82.5)	68 (19.7)	77 (25.0)	—
44.82 (33.42)	2289	4.879 (18.469)	0.760 (0.462)	9.19 (1.810)	178 (80.8)	67 (19.4)	75 (23.6)	—
130.92 (97.62)	2235	8.825 (33.406)	0.470 (0.286)	14.83 (2.922)	179 (81.7)	68 (19.7)	75 (23.9)	—
Av 104.54 **Av (77.95)**	**2234**	**7.576** **(28.679)**	**0.506** **(0.308)**	**13.80** **(2.718)**	**179** **(81.4)**	**67** **(19.4)**	**75** **(24.0)**	**28.92** **(97.63)**

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 9th (2-4) Gear											
166.62 (124.25)	11276 (50.16)	5.54 (8.92)	2099	3.25	10.689 (40.463)	0.448 (0.272)	15.59 (3.071)	183 (83.6)	59 (14.7)	72 (22.2)	28.85 (97.42)
75% of Pull at Maximum Power — Ten Hours 9th (2-4) Gear											
134.90 (100.60)	8627 (38.38)	5.86 (9.44)	2202	2.47	9.560 (36.189)	0.495 (0.301)	14.11 (2.780)	183 (83.9)	57 (13.7)	69 (20.6)	29.01 (97.96)
50% of Pull at Maximum Power — Two Hours 9th (2-4) Gear											
92.57 (69.03)	5752 (25.59)	6.03 (9.71)	2247	1.69	7.723 (29.235)	0.582 (0.354)	11.99 (2.361)	183 (83.9)	60 (15.3)	75 (23.9)	28.97 (97.83)
50% of Pull at Reduced Engine Speed — Two Hours 12th (3-2) Gear											
92.67 (69.10)	5752 (25.59)	6.04 (9.72)	1311	1.69	5.724 (21.669)	0.431 (0.262)	16.19 (3.189)	186 (85.3)	61 (15.8)	78 (25.3)	28.96 (97.79)
MAXIMUM POWER IN SELECTED GEARS											
137.28 (102.37)	24123 (107.30)	2.13 (3.43)	2172	14.78	3rd (1-3) Gear			182 (83.3)	50 (10.0)	54 (12.2)	28.97 (97.83)
150.15 (111.97)	23774 (105.75)	2.37 (3.81)	2101	14.29	4th (1-4) Gear			183 (83.9)	54 (12.2)	60 (15.6)	28.99 (97.89)
161.31 (120.29)	20016 (89.03)	3.02 (4.86)	2100	8.02	5th (1-5) Gear			182 (83.1)	60 (15.6)	75 (23.9)	28.84 (97.39)
164.96 (123.01)	17912 (79.67)	3.45 (5.56)	2100	6.31	6th (2-1) Gear			182 (83.3)	60 (15.6)	75 (23.9)	28.84 (97.39)
169.78 (126.61)	15883 (70.65)	4.01 (6.45)	2097	5.20	7th (2-2) Gear			183 (83.6)	60 (15.6)	75 (23.9)	28.85 (97.42)
170.56 (127.19)	13245 (58.92)	4.83 (7.77)	2101	3.92	8th (2-3) Gear			183 (83.9)	60 (15.6)	74 (23.3)	28.86 (97.46)
170.08 (126.83)	11503 (51.17)	5.54 (8.92)	2100	3.23	9th (2-4) Gear			183 (83.9)	59 (15.0)	73 (22.8)	28.85 (97.42)
166.57 (124.21)	9428 (41.94)	6.63 (10.66)	2100	2.60	10th (2-5) Gear			184 (84.2)	60 (15.6)	74 (23.3)	28.86 (97.46)
166.71 (124.32)	7454 (33.16)	8.41 (13.53)	2101	1.89	11th (3-1) Gear			183 (83.9)	60 (15.6)	73 (22.8)	28.85 (97.42)

Department of Agricultural Engineering

Dates of Test: May 16 to 28, 1985

Manufacturer: VERSATILE FARM EQUIPMENT COMPANY, 1260 Clarence Avenue, Winnipeg, Manitoba Canada R3T 1T5

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8382 **Fuel weight** 6.979 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 6.423 gal *(24.315 l)* **Drained from motor** 5.921 gal *(22.414 l)* **Transmission and hydraulic lubricant** Versatile HyGear 23 or equivalent **Final drive lubricant** SAE 85W140 **Total time engine was operated** 47.5 hours.

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 34515051 **Crankshaft** lengthwise **Rated rpm** 1750 to 2100 **Bore and stroke** 4.921" × 5.354" *(125 mm × 136 mm)* **Compression ratio** 16.0 to 1 **Displacement** 611 cu in *(10010 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 836 85 215121 **Tread width** rear 62" *(1575 mm)* to 120.1" *(3050 mm)* front 62" *(1575 mm)* to 120.1" *(3050 mm)* **Wheel base** 129.9" *(3300 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 74.3" *(1887 mm)* Vertical distance above roadway 41" *(1041 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.8 *(2.8)* second 2.0 *(3.3)* third 2.3 *(3.7)* fourth 2.8 *(4.4)* fifth 3.3 *(5.3)* sixth 3.7 *(5.9)* seventh 4.2 *(6.8)* eighth 5.0 *(8.1)* ninth 5.7 *(9.2)* tenth 6.8 *(10.9)* eleventh 8.6 *(13.8)* twelfth 9.8 *(15.8)* thirteenth 11.7 *(18.8)* fourteenth 13.3 *(21.4)* fifteenth 15.8 *(25.4)* reverse 2.7 *(4.4)*, 3.1 *(5.0)*, 3.7 *(6.0)*, 4.2 *(6.8)*, 5.0 *(8.1)* **Clutch** multiple wet disc operated by foot pedal **Brakes** caliper disc hydraulically actuated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 236" *(5.99 m)* left 236" *(5.99 m)* **Turning space diameter** (on concrete surface without brake) right 490" *(12.45 m)* left 490" *(12.45 m)* **Power take-off** 1008 rpm at 2100 engine rpm **Unladen tractor mass** 24480 lb *(11104 kg)*.

LUGGING ABILITY IN 9th (2-4) GEAR

Crankshaft Speed rpm	2100	1888	1677	1471	1254	1050
Pull—lbs (kN)	11503 (51.17)	13329 (59.29)	14523 (64.60)	15743 (70.03)	16513 (73.45)	15936 (70.89)
Increase in Pull %	0	16	26	37	44	39
Power—Hp (kW)	170.08 (126.83)	175.81 (131.10)	169.33 (126.27)	160.04 (119.34)	142.30 (106.12)	115.21 (85.91)
Speed—Mph (km/h)	5.54 (8.92)	4.95 (7.96)	4.37 (7.04)	3.81 (6.14)	3.23 (5.20)	2.71 (4.36)
Slip %	3.23	4.07	4.38	4.98	5.72	5.28

TRACTOR SOUND LEVEL WITH CAB	1750 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	77.0	79.0	84.0
75% of Pull at Maximum Power—Ten Hours			80.0
50% of Pull at Maximum Power—Two Hours			81.0
50% of Pull at Reduced Engine Speed—Two Hours			74.0
Bystander in 15th (3-5) gear			92.0

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 9th (2-4) Gear											
172.66 (128.75)	13006 (57.85)	4.98 (8.01)	1900	4.11	10.496 (39.731)	0.424 (0.258)	16.45 (3.241)	184 (84.4)	57 (13.9)	67 (19.4)	28.99 (97.89)
MAXIMUM POWER IN SELECTED GEARS											
175.49 (130.87)	15205 (67.63)	4.33 (6.97)	1900	4.83	8th (2-3) Gear			183 (83.6)	60 (15.6)	74 (23.3)	28.86 (97.46)
175.81 (131.10)	13237 (58.88)	4.98 (8.02)	1898	3.92	9th (2-4) Gear			183 (83.6)	59 (15.0)	73 (22.8)	28.85 (97.42)

DRAWBAR PERFORMANCE AT 1750 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 9th (2-4) Gear											
169.34 (126.28)	13901 (61.83)	4.57 (7.35)	1749	4.26	10.025 (37.949)	0.415 (0.252)	16.90 (3.328)	186 (85.3)	59 (15.0)	73 (22.8)	29.00 (97.91)
MAXIMUM POWER IN SELECTED GEARS											
170.62 (127.23)	16152 (71.85)	3.96 (6.37)	1748	5.55	8th (2-3) Gear			183 (83.6)	60 (15.6)	74 (23.3)	28.85 (97.42)
171.76 (128.08)	14084 (62.65)	4.57 (7.36)	1750	4.22	9th (2-4) Gear			183 (83.9)	59 (15.0)	73 (22.8)	28.85 (97.42)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 18.4-38; 8; inner 14 (95) outer 12 (85)	Four 18.4-38; 8; inner 14 (95) outer 12 (85)
Ballast	—Liquid (each inner)	305 lb (138 kg)	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi (kPa)	Four 18.4-38, 8, inner 14 (95) outer 12 (85)	Four 18.4-38, 8, inner 14 (95) outer 12 (85)
Ballast	—Liquid (each inner)	345 lb (157 kg)	None
	—Cast Iron (each)	None	None
Height of Drawbar		18 in (455 mm)	18 in (455 mm)
Static Weight with Operator	—Rear	11170 lb (5067 kg)	10560 lb (4790 kg)
	—Front	14790 lb (6709 kg)	14100 lb (6396 kg)
	—Total	25960 lb (11776 kg)	24660 lb (11186 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 121°F *(49.5°C)*. Nine gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. During the drawbar tests, the alternator belt guard bracket supports broke. A considerable amount of oil leaked from the valve block during the hydraulic lift test.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1566,** June 21, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

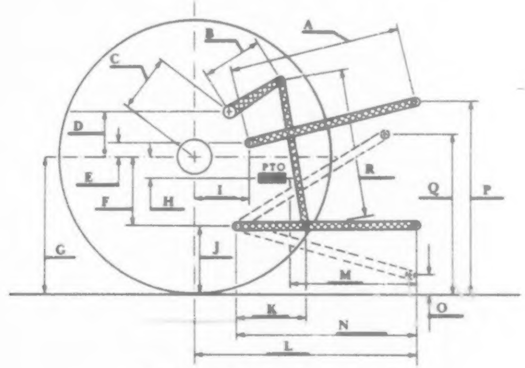
THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	** 2550	*(17580)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	132	*(56)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	IV		*not measured
LOAD lbs *(kg)*	*** 12744	*(5781)*	
TIME sec	4.13		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	13.8	*(351)*	
Top of timed range	43.8	*(1113)*	
Highest position	43.9	*(1115)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.2	*(335)*	
Top of timed range	50.1	*(1272)*	
Highest position	50.4	*(1280)*	

*Implement load capacity for transport purposes not specified by manufacturer.

**The observed maximum pressure was outside the range specified by the manufacturer, 2400-2500 psi *(16550/17240 kPa)*

***The manufacturer's claimed capacity was 21700 lbs *(9840 kg)*



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	27.4	*695*
B	18.6	*472*
C	20.3	*516*
D	19.0	*483*
E	12.6	*319*
F	10.4	*263*
G	31.4	*798*
H	1.7	*44*
I	25.7	*652*
J	21.0	*533*
K	25.0	*635*
L	53.4	*1356*
L'	59.9	*1521*
M	27.9	*708*
N	43.0	*1092*
O	8.0	*203*
P	48.0	*1219*
Q	42.0	*1067*
R	32.6	*829*

L' to end of quick attach

Versatile 836 Manual Diesel

NEBRASKA TRACTOR TEST 1567— VERSATILE 836 POWERSHIFT DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

	Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			
			gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
	MAXIMUM POWER AND FUEL CONSUMPTION								
	Rated Engine Speed — Two hours (PTO Speed—997 rpm)								
	181.04 *(135.00)*	2100	10.873 *(41.158)*	0.419 *(0.255)*	16.65 *(3.281)*	182 *(83.5)*	63 *(17.0)*	75 *(24.0)*	28.91 *(97.62)*
	Reduced Engine Speed — One hour (PTO Speed —851 rpm)								
	185.62 *(138.42)*	1795	10.295 *(38.972)*	0.387 *(0.235)*	18.03 *(3.552)*	184 *(84.4)*	63 *(17.3)*	75 *(23.8)*	28.92 *(97.64)*
	VARYING POWER AND FUEL CONSUMPTION — Two Hours								
	160.02 *(119.33)*	2183	10.228 *(38.717)*	0.446 *(0.271)*	15.65 *(3.082)*	190 *(82.2)*	64 *(17.8)*	76 *(24.2)*	— —
	0.00 *(0.00)*	2322	3.676 *(13.915)*	— —	— —	177 *(80.6)*	62 *(16.7)*	72 *(22.2)*	— —
	82.61 *(61.61)*	2260	7.399 *(28.008)*	0.625 *(0.380)*	11.17 *(2.200)*	179 *(81.7)*	64 *(17.5)*	75 *(23.6)*	— —
	181.20 *(135.12)*	2100	11.212 *(42.443)*	0.432 *(0.263)*	16.16 *(3.184)*	183 *(83.6)*	64 *(17.8)*	75 *(23.9)*	— —
	41.85 *(31.21)*	2288	5.245 *(19.855)*	0.875 *(0.532)*	7.98 *(1.572)*	177 *(80.6)*	63 *(17.2)*	74 *(23.1)*	— —
	122.46 *(91.32)*	2227	9.076 *(34.355)*	0.517 *(0.315)*	13.49 *(2.658)*	180 *(81.9)*	64 *(17.8)*	75 *(23.6)*	— —
Av *Av*	**98.02** *(73.10)*	**2230**	**7.806** *(29.549)*	**0.556** *(0.338)*	**12.56** *(2.474)*	**179** *(81.8)*	**63** *(17.5)*	**74** *(23.4)*	**28.91** *(97.64)*

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			
					gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 7th Gear											
158.31 *(118.05)*	10765 *(47.89)*	5.51 *(8.87)*	2101	2.71	10.698 *(40.496)*	0.472 *(0.287)*	14.80 *(2.915)*	183 *(83.9)*	60 *(15.3)*	71 *(21.4)*	28.75 *(97.02)*
75% of Pull at Maximum Power — Ten Hours 7th Gear											
127.01 *(94.71)*	8204 *(36.49)*	5.81 *(9.34)*	2191	1.82	9.524 *(36.053)*	0.523 *(0.318)*	13.34 *(2.627)*	183 *(83.9)*	70 *(21.2)*	77 *(25.2)*	28.44 *(96.02)*
50% of Pull at Maximum Power — Two Hours 7th Gear											
86.91 *(64.81)*	5470 *(24.33)*	5.96 *(9.59)*	2230	1.08	7.731 *(29.267)*	0.621 *(0.378)*	11.24 *(2.215)*	182 *(83.3)*	74 *(23.3)*	86 *(29.7)*	28.61 *(96.59)*
50% of Pull at Reduced Engine Speed — Two Hours 10th Gear											
86.90 *(64.80)*	5472 *(24.34)*	5.96 *(9.58)*	1224	1.12	5.567 *(21.075)*	0.447 *(0.272)*	15.61 *(3.075)*	184 *(84.2)*	63 *(17.2)*	79 *(26.1)*	28.77 *(97.15)*
MAXIMUM POWER IN SELECTED GEARS											
134.54 *(100.32)*	24723 *(109.97)*	2.04 *(3.28)*	2131	14.72	2nd Gear			180 *(82.2)*	54 *(12.2)*	64 *(17.8)*	28.70 *(96.92)*
148.06 *(110.41)*	20850 *(92.75)*	2.66 *(4.29)*	2099	7.47	3rd Gear			181 *(82.8)*	56 *(13.3)*	67 *(19.4)*	28.73 *(97.02)*
157.19 *(117.21)*	17823 *(79.28)*	3.31 *(5.32)*	2099	5.74	4th Gear			184 *(84.4)*	72 *(22.2)*	83 *(28.3)*	28.62 *(96.65)*
160.81 *(119.91)*	14653 *(65.18)*	4.12 *(6.62)*	2099	4.02	5th Gear			184 *(84.4)*	71 *(21.7)*	81 *(27.2)*	28.63 *(96.68)*
156.34 *(116.58)*	11515 *(51.22)*	5.09 *(8.19)*	2099	3.02	6th Gear			184 *(84.4)*	71 *(21.7)*	81 *(27.2)*	28.62 *(96.65)*
160.71 *(119.84)*	10939 *(48.66)*	5.51 *(8.87)*	2099	2.86	7th Gear			184 *(84.2)*	69 *(20.6)*	79 *(26.1)*	28.62 *(96.65)*
161.45 *(120.39)*	8940 *(39.77)*	6.77 *(10.90)*	2097	2.16	8th Gear			183 *(83.9)*	70 *(21.1)*	81 *(27.2)*	28.62 *(96.65)*
153.26 *(114.29)*	6893 *(30.66)*	8.54 *(13.42)*	2099	1.52	9th Gear			184 *(84.2)*	71 *(21.7)*	81 *(27.2)*	28.62 *(96.65)*

Department of Agricultural Engineering

Dates of Test: May 7 to 31, 1985

Manufacturer: VERSATILE FARM EQUIPMENT COMPANY, 1260 Clarence Avenue, Winnipeg, Manitoba, Canada R3T 1T3

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F *(15/15°C)*** 0.8381 **Fuel weight** 6.978 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 6.528 gal *(24.711 l)* **Drained from motor** 5.748 gal *(21.758 l)* **Transmission lubricant** Mobil Delvac 1330 **Final drive lubricant** SAE 85W140 **Total time engine was operated** 45.0 hours.

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 34514251 **Crankshaft** lengthwise **Rated rpm** 1750 to 2100 **Bore and stroke** 4.921" × 5.354" *(125 mm × 136 mm)* **Compression ratio** 16.0 to 1 **Displacement** 611 cu in *(10010 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 836 85 217104 **Tread width** rear 62" *(1575 mm)* to 120.1" *(3050 mm)* front 62" *(1575 mm)* to 120.1" *(3050 mm)* **Wheel base** 129.9" *(3300 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 74.0" *(1880 mm)* Vertical distance above roadway 41" *(1041 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Advertised speeds mph *(km/h)*** first 1.9 *(3.1)* second 2.4 *(3.8)* third 2.9 *(4.6)* fourth 3.5 *(5.6)* fifth 4.3 *(6.9)* sixth 5.2 *(8.4)* seventh 5.7 *(9.1)* eighth 6.9 *(11.2)* ninth 8.4 *(13.6)* tenth 10.3 *(16.6)* eleventh 12.6 *(20.2)* twelfth 15.4 *(24.8)* reverse 2.3 *(3.7)*, 2.8 *(4.5)*, 3.4 *(5.5)* **Clutch** multiple wet disc hydraulically power actuated and operated by foot pedal **Brakes** caliper disc hydraulically actuated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 236" *(5.99 m)* left 236" *(5.99 m)* **Turning space diameter** (on concrete surface without brake) right 490" *(12.45 m)* left 490" *(12.45 m)* **Power take-off** 997 rpm at 2100 engine rpm **Unladen tractor mass** 24280 lb *(11013 kg)*.

LUGGING ABILITY IN 7th GEAR

Crankshaft Speed rpm	2099	1885	1683	1473	1255	1046
Pull—lbs *(kN)*	10939 *(48.66)*	12599 *(56.04)*	13798 *(61.38)*	15068 *(67.03)*	15997 *(71.16)*	15027 *(66.84)*
Increase in Pull %	0	15	26	38	46	37
Power—Hp *(kW)*	160.71 *(119.84)*	165.31 *(123.27)*	160.89 *(119.97)*	152.92 *(114.04)*	137.73 *(102.71)*	108.11 *(80.62)*
Speed—Mph *(km/h)*	5.51 *(8.87)*	4.92 *(7.92)*	4.37 *(7.04)*	3.81 *(6.12)*	3.23 *(5.20)*	2.70 *(4.34)*
Slip %	2.86	3.41	3.87	4.32	4.63	4.48

TRACTOR SOUND LEVEL WITH CAB	1750 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	79.5	77.5	79.5
75% of Pull at Maximum Power—Ten Hours			79.5
50% of Pull at Maximum Power—Two Hours			79.0
50% of Pull at Reduced Engine Speed—Two Hours			71.5
Bystander in 12th gear			91.5

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cool-ing med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 7th Gear											
164.91 *(122.98)*	12454 *(55.40)*	4.97 *(7.99)*	1900	3.18	10.497 *(39.737)*	0.444 *(0.270)*	15.71 *(3.095)*	183 *(83.9)*	62 *(16.4)*	73 *(22.8)*	28.78 *(97.19)*
MAXIMUM POWER IN SELECTED GEAR											
167.47 *(124.88)*	12641 *(56.23)*	4.97 *(8.00)*	1901	3.18	7th Gear			183 *(83.9)*	62 *(16.7)*	74 *(23.3)*	28.78 *(97.19)*

DRAWBAR PERFORMANCE AT 1750 RPM

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cool-ing med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power — Two Hours 7th Gear											
162.11 *(120.88)*	13345 *(59.36)*	4.56 *(7.33)*	1749	3.68	10.003 *(37.865)*	0.431 *(0.262)*	16.21 *(3.192)*	183 *(83.9)*	62 *(16.7)*	76 *(24.2)*	28.78 *(97.17)*
MAXIMUM POWER IN SELECTED GEAR											
165.05 *(123.08)*	13577 *(60.39)*	4.56 *(7.34)*	1750	3.56	7th Gear			183 *(83.9)*	62 *(16.7)*	76 *(24.4)*	28.77 *(97.15)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 18.4-38, 8, inner 14 *(95)* outer 12 *(85)*	Four 18.4-38, 8, inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	262 lb *(119 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Four 18.4-38, 8, inner 14 *(95)* outer 12 *(85)*	Four 18.4-38, 8, inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	505 lb *(229 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		18 in *(455 mm)*	18 in *(455 mm)*
Static Weight with Operator	—Rear	11055 lb *(5014 kg)*	10530 lb *(4776 kg)*
	—Front	14940 lb *(6777 kg)*	13930 lb *(6319 kg)*
	—Total	25995 lb *(11791 kg)*	24460 lb *(11095 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 120°F *(48.8°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. Following the PTO test, one of the alternator belt guard bracket supports was found broken.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1567**, June 21, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

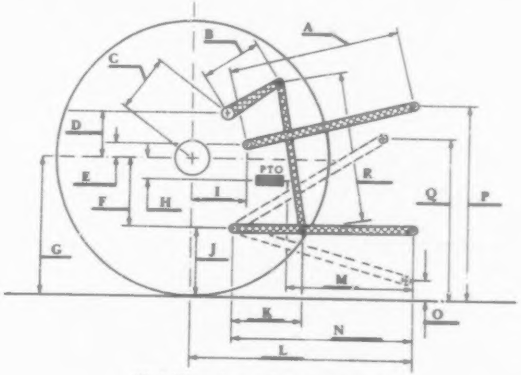
K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	** 2575	*(17750)*	
Location	remote outlet		
Hydraulic oil temperature °F (°C)	121	*(49)*	
Location	pump inlet		

	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	IV		*not measured
LOAD lbs *(kg)*	*** 12744	*(5781)*	
TIME sec	3.82		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	14.0	*(356)*	
Top of timed range	44.0	*(1118)*	
Highest position	44.6	*(1133)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.7	*(348)*	
Top of timed range	50.3	*(1278)*	
Highest position	51.7	*(1313)*	

*Implement load capacity for transport purposes not specified by manufacturer.
**The observed maximum pressure was outside the range specified by the manufacturer, 2400-2500 psi *(16550-17240 kPa)*.
***The manufacturer's claimed capacity was 21700 lbs *(9840 kg)*.



Hitch Dimensions as Tested — No Load

	inch	mm
A	28.0	*711*
B	18.6	*472*
C	20.3	*516*
D	19.0	*483*
E	12.6	*319*
F	10.4	*263*
G	31.2	*791*
H	1.7	*44*
I	25.7	*652*
J	20.8	*527*
K	25.0	*635*
L	53.4	*1356*
L'	59.9	*1521*
M	27.9	*708*
N	43.0	*1092*
O	8.0	*203*
P	47.8	*1213*
Q	42.1	*1070*
R	32.5	*826*

L' to end of quick attach

Versatile 836 Powershift Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1568—VERSATILE 856 POWERSHIFT DIESEL 12 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—997 rpm)								
209.28 (156.06)	2101	12.139 (45.951)	0.405 (0.246)	17.24 (3.397)	182 (83.3)	65 (18.3)	75 (23.6)	28.73 (97.02)
Reduced Engine Speed — One hour (PTO Speed—851 rpm)								
208.55 (155.52)	1795	11.271 (42.666)	0.378 (0.230)	18.48 (3.642)	185 (85.0)	64 (17.7)	75 (24.1)	28.70 (96.92)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
186.17 (138.83)	2198	11.479 (43.452)	0.430 (0.262)	16.22 (3.194)	180 (82.2)	63 (17.2)	76 (24.4)	
0.00 (0.00)	2343	3.656 (13.840)			174 (78.9)	64 (17.8)	75 (23.6)	
96.54 (71.99)	2280	8.095 (30.643)	0.585 (0.356)	11.93 (2.349)	177 (80.6)	64 (17.5)	77 (24.7)	
210.28 (156.79)	2100	12.446 (47.114)	0.413 (0.251)	16.89 (3.328)	185 (85.0)	65 (18.1)	76 (24.6)	
48.77 (36.37)	2310	5.744 (21.743)	0.822 (0.500)	8.49 (1.673)	175 (79.4)	65 (18.3)	74 (23.3)	
142.57 (106.31)	2243	10.112 (38.277)	0.496 (0.302)	14.10 (2.778)	179 (81.4)	66 (18.9)	76 (24.2)	
Av 114.01 Av (85.02)	**2246**	**8.622 (32.638)**	**0.528 (0.321)**	**13.22 (2.605)**	**178 (81.1)**	**64 (17.8)**	**75 (24.1)**	**28.69 (96.88)**

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th Gear											
182.42 (136.03)	11658 (51.86)	5.88 (9.46)	2101	2.85	11.886 (44.995)	0.455 (0.277)	15.35 (3.023)	181 (82.8)	55 (12.5)	65 (18.3)	28.83 (97.35)
75% of Pull at Maximum Power — Ten Hours 7th Gear											
147.55 (110.02)	8850 (39.37)	6.25 (10.06)	2221	2.24	10.854 (41.087)	0.513 (0.312)	13.59 (2.678)	181 (82.7)	54 (12.0)	55 (13.0)	29.54 (96.38)
50% of Pull at Maximum Power — Two Hours 7th Gear											
100.95 (75.28)	[illegible]	6.41 (10.32)	2208	1.74	8.856 (33.525)	0.612 (0.372)	11.40 (2.245)	178 (81.1)	55 (12.7)	54 (11.9)	28.74 (97.05)
50% of Pull at Reduced Engine Speed — Two Hours 9th Gear											
101.01 (75.32)	5901 (26.25)	8.42 (10.33)	1519	1.78	6.915 (26.175)	0.478 (0.291)	14.61 (2.878)	180 (82.2)	54 (11.9)	55 (12.8)	28.67 (96.80)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
156.65 (116.81)	26479 (117.78)	2.22 (3.57)	2176	14.75	2nd Gear	179 (81.7)	53 (11.7)	58 (14.4)	28.92 (97.66)
175.49 (130.87)	23284 (103.56)	2.83 (4.55)	2098	7.46	3rd Gear	180 (82.2)	54 (12.2)	60 (15.6)	28.95 (97.76)
183.55 (136.87)	19406 (86.32)	3.55 (5.71)	2099	5.26	4th Gear	180 (82.2)	50 (10.0)	56 (13.3)	28.82 (97.32)
184.06 (137.26)	15711 (69.88)	4.39 (7.07)	2099	3.58	5th Gear	181 (82.5)	50 (10.0)	56 (13.3)	28.82 (97.32)
175.75 (131.06)	12141 (54.01)	5.43 (8.74)	2100	3.00	6th Gear	181 (82.5)	50 (10.0)	57 (13.8)	28.82 (97.32)
185.04 (137.99)	11810 (52.53)	5.88 (9.46)	2100	2.85	7th Gear	181 (82.5)	52 (11.1)	59 (15.0)	28.85 (97.35)
185.15 (138.06)	9522 (42.35)	7.21 (11.61)	2098	2.25	8th Gear	180 (82.2)	50 (10.0)	57 (13.8)	28.82 (97.32)
173.11 (129.09)	7321 (32.57)	8.87 (14.27)	2099	1.83	9th Gear	180 (82.2)	52 (11.1)	59 (15.0)	28.85 (97.35)

Department of Agricultural Engineering

Dates of Test: May 4 to 16, 1985

Manufacturer: VERSATILE FARM EQUIPMENT COMPANY, 1260 Clarence Avenue, Winnipeg, Manitoba, Canada R3T 1T5

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.5 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8381 **Fuel weight** 6.978 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 6.691 gal *(25.329 l)* **Drained from motor** 5.249 gal *(19.869 l)* **Transmission lubricant** Mobil Delvac 1350 **Final drive lubricant** SAE 85W140 **Total time engine was operated** 50.5 hours.

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 34514049 **Crankshaft** lengthwise **Rated rpm** 1750 to 2100 **Bore and stroke** 4.921" × 5.354" *(125 mm × 136 mm)* **Compression ratio** 16.0 to 1 **Displacement** 611 cu in *(10010 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 856 85 221045 **Tread width** rear 72" *(1830 mm)* to 128" *(3250 mm)* front 72" *(1830 mm)* to 128" *(3250 mm)* **Wheel base** 129.9" *(3300 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 73.7" *(1871 mm)* Vertical distance above roadway 41" *(1041 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Advertised speeds mph (km/h)** first 2.0 *(3.2)* second 2.4 *(3.9)* third 3.0 *(4.8)* fourth 3.6 *(5.8)* fifth 4.4 *(7.1)* sixth 5.4 *(8.7)* seventh 5.8 *(9.4)* eighth 7.1 *(11.3)* ninth 8.7 *(14.0)* tenth 10.6 *(17.1)* eleventh 13.0 *(20.9)* twelfth 15.9 *(25.6)* reverse 2.3 *(3.8)*, 2.9 *(4.6)*, 3.5 *(5.6)* **Clutch** multiple wet disc hydraulically power actuated and operated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 239" *(6.07 m)* left 239" *(6.07 m)* **Turning space diameter** (on concrete surface without brake) right 490" *(12.45 m)* left 490" *(12.45 m)* **Power take-off** 996 rpm at 2100 engine rpm **Unladen tractor mass** 24900 lb *(11295 kg)*.

LUGGING ABILITY IN 7th GEAR

Crankshaft Speed rpm	2100	1887	1679	1465	1246	1047
Pull—lbs (kN)	11810 (52.53)	13394 (59.58)	14684 (65.32)	15726 (69.95)	16407 (72.98)	15457 (68.76)
Increase in Pull %	0	13	24	33	39	31
Power—Hp (kW)	185.04 (137.99)	187.72 (139.98)	182.51 (136.10)	169.98 (126.75)	150.45 (112.19)	119.53 (89.13)
Speed—Mph (km/h)	5.88 (9.46)	5.26 (8.46)	4.66 (7.50)	4.05 (6.52)	3.44 (5.53)	2.90 (4.66)
Slip %	2.85	3.33	3.63	3.82	4.14	3.82

TRACTOR SOUND LEVEL WITH CAB	1750 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	84.0	81.0	82.5
75% of Pull at Maximum Power—Ten Hours			79.0
50% of Pull at Maximum Power—Two Hours			80.5
50% of Pull at Reduced Engine Speed—Two Hours			76.5
Bystander in 12th gear			91.5

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th Gear											
185.32 (138.20)	13130 (58.41)	5.29 (8.52)	1900	3.20	11.515 (43.588)	0.434 (0.264)	16.09 (3.170)	182 (83.3)	56 (13.3)	66 (18.6)	28.84 (97.37)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
188.17 (140.32)	13331 (59.30)	5.29 (8.51)	1897	3.24	7th Gear	180 (82.2)	53 (11.7)	60 (15.6)	28.83 (97.35)
186.95 (139.41)	10762 (47.87)	6.51 (10.48)	1901	2.66	8th Gear	181 (82.8)	51 (10.6)	58 (14.4)	28.82 (97.32)

DRAWBAR PERFORMANCE AT 1750 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th Gear											
181.22 (135.13)	13979 (62.18)	4.86 (7.82)	1749	3.53	11.063 (41.879)	0.426 (0.259)	16.38 (3.227)	183 (83.6)	56 (13.3)	67 (19.2)	28.84 (97.37)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
183.73 (137.01)	14178 (63.07)	4.86 (7.82)	1749	3.57	7th Gear	183 (83.6)	56 (13.3)	66 (18.9)	28.83 (97.35)
184.22 (137.37)	11540 (51.33)	5.99 (9.63)	1750	2.75	8th Gear	182 (83.1)	51 (10.6)	58 (14.4)	28.83 (97.35)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi (kPa)	Four 20.8-38; 8; inner 14 (95) outer 12 (83)	Four 20.8-38; 8; inner 14 (95) outer 12 (83)
Ballast	—Liquid (each inner)	533 lb (242 kg)	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi (kPa)	Four 20.8-38; 8; inner 14 (95) outer 12 (83)	Four 20.8-38; 8; inner 14 (95) outer 12 (83)
Ballast	—Liquid (each inner)	927 lb (421 kg)	None
	—Cast Iron (each)	None	None
Height of Drawbar		19.5 in (495 mm)	19.5 in (495 mm)
Static Weight with Operator	—Rear	11925 lb (5409 kg)	10640 lb (4826 kg)
	—Front	16075 lb (7292 kg)	14260 lb (6468 kg)
	—Total	28000 lb (12701 kg)	24900 lb (11294 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 112°F *(44.6°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. During the lift test, a retaining pin sheared. This did not affect the lift test.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1568**, June 20, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers

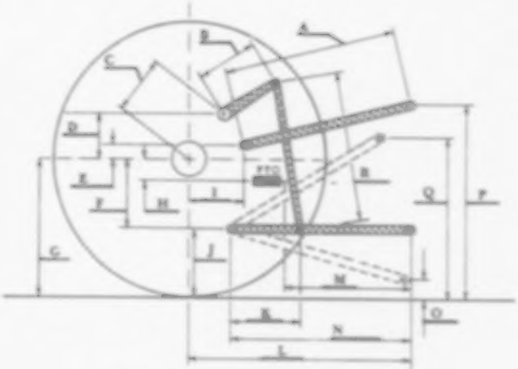
Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Irvin T. Omtvedt, Dean and Director

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	** 2525	(17410)
Location	remote outlet	
Hydraulic oil temperature °F (°C)	129	(54)
Location	pump inlet	

	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	yes		
CATEGORY	IV		*not measured
LOAD lbs (kg)	*** 13036	(5913)	
TIME sec	4.09		
HITCH POINT MOVEMENT in (mm)			
Lowest position	13.8	(351)	
Top of tamed range	43.8	(1113)	
Highest position	44.0	(1118)	
LOAD CG MOVEMENT in (mm)			
Lowest position	12.7	(323)	
Top of tamed range	49.2	(1250)	
Highest position	49.8	(1265)	

*Implement load capacity for transport purposes not specified by manufacturer.
**The observed maximum pressure was outside the range specified by the manufacturer, 2400-2500 psi (16550-17240 kPa).
***The manufacturer's claimed capacity was 11700 lbs (5306 kg).



Hitch Dimensions as Tested — No Load

	inch	mm
A	27.6	702
B	18.6	472
C	20.3	516
D	19.0	483
E	12.5	319
F	10.4	263
G	33.3	845
H	1.7	44
I	25.7	652
J	22.9	582
K	25.0	635
L	53.4	1356
L'	59.9	1521
M	27.6	700
N	43.0	1092
O	8.0	203
P	49.9	1267
Q	42.0	1067
R	33.4	848

L' to end of quick attach

Versatile 856 Powershift Diesel

NEBRASKA TRACTOR TEST 1569—VERSATILE 876 MANUAL DIESEL 12 SPEED

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	Fuel Consumption lb/hp-hr (kg/kW-h)	Fuel Consumption Hp-hr/gal (kW-h/l)	Temp °F (°C) Cool-ing med	Temp °F (°C) Air wet bulb	Temp °F (°C) Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2-3) Gear											
228.33 *(170.27)*	13110 *(58.31)*	6.53 *(10.51)*	2099	5.10	15.555 *(58.88)*	0.475 *(0.289)*	14.68 *(2.892)*	183 *(83.9)*	62 *(16.7)*	75 *(23.9)*	28.96 *(97.78)*
75% of Pull at Maximum Power — Ten Hours 7th (2-3) Gear											
184.52 *(137.60)*	10075 *(44.82)*	6.87 *(11.05)*	2189	2.28	11.780 *(44.59)*	0.445 *(0.271)*	15.66 *(3.085)*	181 *(82.8)*	64 *(17.7)*	71 *(21.5)*	28.81 *(97.27)*
50% of Pull at Maximum Power — Two Hours 7th (2-3) Gear											
125.61 *(93.66)*	6717 *(29.88)*	7.01 *(11.29)*	2217	1.55	9.208 *(34.85)*	0.511 *(0.311)*	13.65 *(2.689)*	180 *(82.2)*	67 *(19.4)*	79 *(25.8)*	28.90 *(97.59)*
50% of Pull at Reduced Engine Speed — Two Hours 10th (3-2) Gear											
125.58 *(93.63)*	6716 *(29.87)*	7.01 *(11.29)*	1511	1.47	7.516 *(28.45)*	0.418 *(0.254)*	16.71 *(3.292)*	184 *(84.4)*	57 *(13.9)*	82 *(27.8)*	28.87 *(97.49)*

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
204.16 *(152.25)*	27705 *(123.23)*	2.76 *(4.45)*	2119	14.76	2nd (1-2) Gear	181 *(82.8)*	60 *(15.6)*	66 *(18.9)*	28.62 *(96.65)*
221.86 *(165.44)*	24335 *(108.24)*	3.42 *(5.50)*	2099	7.67	3rd (1-3) Gear	181 *(82.5)*	63 *(17.2)*	70 *(21.1)*	28.60 *(96.58)*
226.82 *(169.14)*	20979 *(93.32)*	4.05 *(6.52)*	2099	5.98	4th (1-4) Gear	184 *(84.2)*	65 *(18.3)*	81 *(27.2)*	28.89 *(97.56)*
232.73 *(173.55)*	18141 *(80.69)*	4.81 *(7.74)*	2100	4.64	5th (2-1) Gear	184 *(84.4)*	65 *(18.3)*	81 *(27.2)*	28.90 *(97.59)*
232.51 *(173.39)*	15478 *(68.85)*	5.63 *(9.07)*	2098	5.67	6th (2-2) Gear	185 *(85.0)*	65 *(18.3)*	81 *(27.2)*	28.88 *(97.52)*
233.92 *(174.44)*	13433 *(59.75)*	6.53 *(10.51)*	2096	5.18	7th (2-3) Gear	185 *(91.7)*	65 *(18.3)*	79 *(26.1)*	28.95 *(97.76)*
230.12 *(171.60)*	11307 *(50.29)*	7.63 *(12.28)*	2100	2.52	8th (2-4) Gear	184 *(84.4)*	65 *(18.3)*	80 *(26.7)*	28.92 *(97.66)*
227.70 *(169.80)*	8888 *(39.54)*	9.61 *(15.46)*	2097	1.85	— 9th (3-1) Gear	185 *(85.0)*	65 *(18.3)*	80 *(26.7)*	28.91 *(97.62)*

LUGGING ABILITY IN 7th (2-3) GEAR

Crankshaft Speed rpm	2096	1888	1679	1467	1250	1044
Pull—lbs (kN)	13433 *(59.75)*	15557 *(69.20)*	17117 *(76.14)*	18752 *(83.41)*	19769 *(87.94)*	18496 *(82.27)*
Increase in Pull %	0	16	27	40	47	38
Power—Hp (kW)	233.92 *(174.44)*	241.67 *(180.22)*	233.42 *(174.06)*	223.48 *(166.65)*	199.59 *(148.83)*	156.85 *(116.96)*
Speed—Mph (km/h)	6.53 *(10.51)*	5.83 *(9.38)*	5.11 *(8.22)*	4.47 *(7.19)*	3.79 *(6.09)*	3.18 *(5.12)*
Slip %	5.18	5.67	4.60	5.12	5.74	5.12

TRACTOR SOUND LEVEL WITH CAB	1750 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	80.6	79.5	84.0
75% of Pull at Maximum Power—Ten Hours			81.0
50% of Pull at Maximum Power—Two Hours			79.0
50% of Pull at Reduced Engine Speed—Two Hours			78.5
Bystander in 12th (3-4) gear			91.5

Department of Agricultural Engineering

Dates of Test: May 21 to 29, 1985

Manufacturer: VERSATILE FARM EQUIPMENT COMPANY, 1260 Clarence Avenue, Winnipeg, Manitoba, Canada R3T 1T5

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 40.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8381 **Fuel weight** 6.978 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 6.771 gal *(25.632 l)* **Drained from motor** 6.091 gal *(23.056 l)* **Transmission and hydraulic lubricant** Versatile HyGear 23 or equivalent **Final drive lubricant** SAE 85W140 **Total time engine was operated** 36.0 hours.

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 34512116 **Crankshaft** lengthwise **Rated rpm** 1750 to 2100 **Bore and stroke** 4.921" × 5.354" *(125 mm × 136 mm)* **Compression ratio** 16.0 to 1 **Displacement** 611 cu in *(10010 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 876 85 223177 **Tread width** rear 72" *(1830 mm)* to 128" *(3250 mm)* front 72" *(1830 mm)* to 128" *(3250 mm)* **Wheel base** 129.9" *(3300 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 75.0" *(1905 mm)* Vertical distance above roadway 41" *(1041 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 2.7 *(4.3)* second 3.1 *(5.0)* third 3.5 *(5.7)* fourth 4.1 *(6.7)* fifth 4.8 *(7.8)* sixth 5.6 *(9.0)* seventh 6.5 *(10.4)* eighth 7.5 *(12.1)* ninth 9.4 *(15.1)* tenth 10.9 *(17.6)* eleventh 12.6 *(20.2)* twelfth 14.6 *(23.5)* reverse 3.4 *(5.5)*, 4.0 *(6.5)*, 4.6 *(7.4)*, 5.4 *(8.6)* **Clutch** dual dry disc operated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 239" *(6.07 m)* left 239" *(6.07 m)* **Turning space diameter**) (on concrete surface without brake) right 490" *(12.45 m)* left 490" *(12.45 m)* **Power take-off** none **Unladen tractor mass** 24780 lb *(11240 kg)*

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2-3) Gear											
238.92 *(178.16)*	15258 *(67.87)*	5.87 *(9.45)*	1900	5.79	13.650 *(51.671)*	0.399 *(0.243)*	17.50 *(3.448)*	183 *(83.9)*	62 *(16.7)*	66 *(18.9)*	28.99 *(98.17)*

MAXIMUM POWER IN SELECTED GEAR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
245.07 *(182.75)*	15518 *(69.03)*	5.87 *(9.45)*	1900	5.67	7th (2-3) Gear	186 *(85.6)*	65 *(18.3)*	80 *(26.7)*	28.94 *(98.00)*

DRAWBAR PERFORMANCE AT 1750 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2-3) Gear											
237.45 *(177.07)*	16540 *(73.57)*	5.38 *(8.66)*	1750	4.16	13.433 *(50.851)*	0.395 *(0.240)*	17.67 *(3.482)*	186 *(85.6)*	65 *(18.3)*	74 *(23.3)*	28.90 *(97.87)*

MAXIMUM POWER IN SELECTED GEAR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
241.80 *(180.31)*	16840 *(74.91)*	5.38 *(8.67)*	1750	4.24	7th (2-3) Gear	185 *(85.0)*	64 *(17.8)*	72 *(22.2)*	28.89 *(97.83)*

TIRES, BALLAST AND WEIGHT		**With Ballast**	**Without Ballast**
Rear Tires	—No., size, ply & psi (kPa)	Four 20.8-38, 8, inner 14 (95) outer 12 (83)	Four 20.8-38, 8, inner 14 (95) outer 12 (83)
Ballast	—Liquid (each inner)	1045 lb (474 kg)	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi (kPa)	Four 20.8-38, 8, inner 14 (95) outer 12 (83)	Four 20.8-38, 8, inner 14 (95) outer 12 (83)
Ballast	—Liquid (each inner)	1265 lb (574 kg)	None
	—Cast Iron (each)	None	None
Height of Drawbar		19.5 in (495 mm)	19.5 in (495 mm)
Static Weight with Operator	—Rear	12560 lb (5697 kg)	10550 lb (4785 kg)
	—Front	16940 lb (7684 kg)	14410 lb (6536 kg)
	—Total	29500 lb (13381 kg)	24960 lb (11322 kg)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2500	*(17240)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	118	*(48)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	IV		*not measured
LOAD lbs *(kg)*	** 12752	*(5784)*	
TIME sec	4.10		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	14.1	*(358)*	
Top of timed range	44.2	*(1123)*	
Highest position	45.0	*(1143)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.2	*(335)*	
Top of timed range	48.7	*(1237)*	
Highest position	50.4	*(1280)*	

*Implement load capacity for transport purposes not specified by manufacturer.
**The manufacturer's claimed capacity was 21700 lbs (9843 kg).

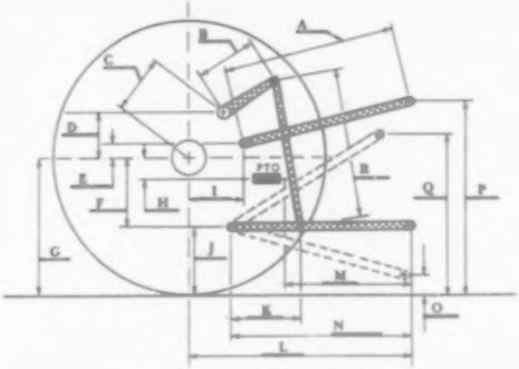
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For thermaximum power tests, the fuel temperature at the injection pump inlet was maintained at 125°F *(51.4°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1560**, June 21, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	29.1	*740*
B	18.6	*472*
C	20.3	*516*
D	19.0	*483*
E	12.6	*319*
F	10.4	*263*
G	33.0	*839*
H	NA	*NA*
I	24.3	*617*
J	22.6	*573*
K	25.0	*635*
L	53.4	*1356*
L'	59.9	*1521*
M	NA	*NA*
N	43.0	*1092*
O	8.0	*203*
P	49.6	*1260*
Q	41.8	*1060*
R	33.3	*845*

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Versatile 876 Manual Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1570—VERSATILE 936 MANUAL DIESEL 12 SPEED

DRAWBAR PERFORMANCE AT 2100 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2-3) Gear											
254.42 (189.72)	14067 (62.57)	6.78 (10.91)	2100	5.29	16.445 (62.249)	0.451 (0.274)	15.47 (3.048)	185 (85.0)	57 (13.9)	67 (19.4)	28.98 (97.86)
75% of Pull at Maximum Power — Ten Hours 7th (2-3) Gear											
210.28 (156.80)	10806 (48.07)	7.30 (11.74)	2254	2.29	14.979 (56.700)	0.497 (0.302)	14.04 (2.765)	185 (85.0)	59 (15.0)	71 (21.7)	28.83 (97.36)
50% of Pull at Maximum Power — Two Hours 7th (2-3) Gear											
144.46 (107.73)	7204 (32.04)	7.52 (12.10)	2283	1.45	11.952 (45.243)	0.577 (0.351)	12.09 (2.381)	181 (82.8)	58 (14.4)	72 (22.2)	28.96 (97.78)
50% of Pull at Reduced Engine Speed — Two Hours 10th (3-2) Gear											
144.61 (107.84)	7205 (32.04)	7.53 (12.12)	1552	1.57	8.978 (33.986)	0.433 (0.264)	16.11 (3.173)	185 (85.0)	58 (14.2)	73 (22.5)	28.92 (97.66)

MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
227.74 (169.83)	29495 (131.20)	2.90 (4.66)	2129	14.96	2nd (1-2) Gear	182 (83.1)	60 (15.6)	62 (16.7)	28.75 (97.08)
244.95 (182.65)	26718 (118.85)	3.50 (5.64)	2099	9.48	3rd (1-3) Gear	183 (83.9)	59 (15.0)	71 (21.7)	28.96 (97.79)
252.58 (188.35)	22594 (100.50)	4.19 (6.75)	2098	6.45	4th (1-4) Gear	183 (83.9)	59 (15.0)	71 (21.7)	28.96 (97.79)
258.58 (192.82)	19465 (86.58)	4.98 (8.02)	2099	5.06	5th (2-1) Gear	183 (83.9)	59 (15.0)	71 (21.7)	28.96 (97.79)
259.01 (193.15)	16605 (73.85)	5.85 (9.41)	2099	4.12	6th (2-2) Gear	183 (83.9)	59 (15.0)	71 (21.7)	28.96 (97.79)
260.45 (194.22)	14408 (64.09)	6.78 (10.91)	2097	3.53	7th (2-3) Gear	183 (83.9)	58 (14.4)	69 (20.6)	28.97 (97.83)
258.24 (192.57)	12213 (54.32)	7.93 (12.76)	2100	2.68	8th (2-4) Gear	183 (83.9)	59 (15.0)	70 (21.1)	28.96 (97.79)
251.42 (187.48)	9427 (41.93)	10.00 (16.10)	2098	1.93	9th (3-1) Gear	183 (83.9)	59 (15.0)	70 (21.1)	28.96 (97.79)

LUGGING ABILITY IN 7th (2-3) GEAR

Crankshaft Speed rpm	2097	1887	1677	1460	1253	1043
Pull—lbs (kN)	14408 (64.09)	16366 (72.80)	18302 (81.41)	20085 (89.34)	19485 (86.68)	17656 (78.54)
Increase in Pull %	0	14	27	39	35	23
Power—Hp (kW)	260.45 (194.22)	264.21 (197.02)	260.87 (194.53)	247.36 (184.46)	206.81 (154.22)	156.70 (116.85)
Speed—Mph (km/h)	6.78 (10.91)	6.05 (9.74)	5.35 (8.60)	4.62 (7.43)	3.98 (6.41)	3.33 (5.36)
Slip %	3.53	3.97	4.60	5.37	5.06	4.44

TRACTOR SOUND LEVEL WITH CAB	1750 RPM dB(A)	1900 RPM dB(A)	2100 RPM dB(A)
Maximum Available Power—Two Hours	79.5	80.5	80.0
75% of Pull at Maximum Power—Ten Hours			81.5
50% of Pull at Maximum Power—Two Hours			81.5
50% of Pull at Reduced Engine Speed—Two Hours			76.5
Bystander in 12th (3-4) gear			93.0

Department of Agricultural Engineering

Dates of Test: May 13 to 20, 1985

Manufacturer: VERSATILE FARM EQUIPMENT COMPANY, 1260 Clarence Avenue, Winnipeg, Manitoba, Canada R3T 1T3

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8381 **Fuel weight** 6.978 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 8.853 gal *(33.511 l)* **Drained from motor** 8.198 gal *(31.034 l)* **Transmission and hydraulic lubricant** Versatile HyGear 23 or equivalent **Final drive lubricant** SAE 85W140 **Total time engine was operated** 45.0 hours

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 11229178 **Crankshaft** lengthwise **Rated rpm** 1750 to 2100 **Bore and stroke** 5.5" × 6.0" *(139.7 mm × 152.4 mm)* **Compression ratio** 14.5 to 1 **Displacement** 855 cu in *(14013 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge and one bypass cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** vertical **Cooling medium temperature control** one thermostat

CHASSIS: Type four wheel drive with duals **Serial No.** 936 85 227111 **Tread width** rear 72" *(1830 mm)* to 134" *(3404 mm)* front 72" *(1830 mm)* to 134" *(3404 mm)* **Wheel base** 129.9" *(3300 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 77.4" *(1965 mm)* Vertical distance above roadway 42" *(1068 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph** *(km/h)* first 2.7 *(4.3)* second 3.2 *(5.1)* third 3.7 *(5.9)* fourth 4.3 *(6.9)* fifth 5.0 *(8.0)* sixth 5.8 *(9.3)* seventh 6.7 *(10.7)* eighth 7.7 *(12.3)* ninth 9.8 *(15.7)* tenth 11.3 *(18.2)* eleventh 13.0 *(21.0)* twelfth 15.2 *(24.5)* reverse 3.6 *(5.8)*, 4.1 *(6.6)*, 4.8 *(7.7)*, 5.5 *(8.9)* **Clutch** dual dry disc operated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 239" *(6.07 m)* left 239" *(6.07 m)* **Turning space diameter** (on concrete surface without brake) right 490" *(12.45 m)* left 490" *(12.45 m)* **Power take-off** none **Unladen tractor mass** 26950 lb *(12225 kg)*

DRAWBAR PERFORMANCE AT 1900 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2-3) Gear											
259.95 (193.85)	15988 (71.12)	6.10 (9.81)	1900	4.01	16.000 (60.568)	0.450 (0.261)	16.25 (3.200)	182 (83.1)	55 (12.5)	62 (16.4)	29.03 (98.01)

MAXIMUM POWER IN SELECTED GEAR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
264.63 (197.33)	16270 (72.37)	6.10 (9.82)	1900	3.97	7th (2-3) Gear	183 (83.9)	58 (14.4)	69 (20.6)	28.97 (97.83)

DRAWBAR PERFORMANCE AT 1750 RPM

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2-3) Gear											
258.76 (192.96)	17372 (77.27)	5.59 (8.99)	1750	4.44	15.499 (58.669)	0.418 (0.254)	16.70 (3.289)	184 (84.2)	58 (14.2)	68 (20.0)	29.00 (97.91)

MAXIMUM POWER IN SELECTED GEAR

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Gear	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
263.25 (196.30)	17660 (78.55)	5.59 (9.00)	1750	4.44	7th (2-3) Gear	183 (83.9)	59 (15.0)	70 (21.1)	28.97 (97.83)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 24.5-32; 10; inner 14 *(95)* outer 12 *(85)*	Four 24.5-32; 10; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	1430 lb *(649 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Four 24.5-32; 10; inner 14 *(95)* outer 12 *(85)*	Four 24.5-32; 10; inner 14 *(95)* outer 12 *(85)*
Ballast	—Liquid (each inner)	1200 lb *(544 kg)*	None
	—Cast Iron (each)	None	None
Height of Drawbar		18.5 in *(470 mm)*	18.5 in *(470 mm)*
Static Weight with Operator	—Rear	13825 lb *(6271 kg)*	10965 lb *(4974 kg)*
	—Front	18560 lb *(8419 kg)*	16160 lb *(7330 kg)*
	—Total	32385 lb *(14690 kg)*	27125 lb *(12304 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2475	*(17060)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	129	*(54)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	IV		*not measured
LOAD lbs *(kg)*	** 13028	*(5909)*	
TIME sec	3.91		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	13.8	*(350)*	
Top of timed range	43.8	*(1112)*	
Highest position	44.7	*(1135)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	13.2	*(335)*	
Top of timed range	49.2	*(1250)*	
Highest position	50.4	*(1280)*	

*Implement load capacity for transport purposes not specified by manufacturer

**The manufacturer's claimed capacity was 21700 lbs *(9840 kg)*

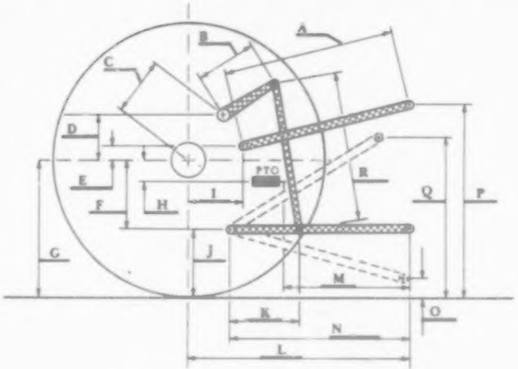
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 120°F *(48.9°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1570**, June 21, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	29.3	*743*
B	18.6	*472*
C	20.3	*516*
D	19.0	*483*
E	12.6	*319*
F	10.4	*263*
G	32.0	*813*
H	NA	*NA*
I	24.3	*617*
J	21.6	*549*
K	25.0	*635*
L	53.4	*1356*
L'	59.9	*1521*
M	NA	*NA*
N	43.0	*1092*
O	7.9	*200*
P	48.6	*1235*
Q	41.5	*1054*
R	32.8	*832*

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Versatile 936 Manual Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1558—WHITE FARM EQUIPMENT 4-225 DIESEL 18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —1002 rpm)								
195.65 *(145.90)*	2600	12.540 *(47.470)*	0.447 *(0.272)*	15.60 *(3.074)*	189 *(87.2)*	63 *(17.0)*	75 *(23.8)*	28.88 *(97.51)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
170.62 *(127.23)*	2669	11.532 *(43.653)*	0.471 *(0.287)*	14.80 *(2.915)*	188 *(86.7)*	64 *(17.8)*	76 *(24.4)*	—
0.00 *(0.00)*	2816	4.350 *(16.468)*	—	—	179 *(81.4)*	64 *(17.5)*	75 *(23.9)*	—
88.08 *(65.68)*	2752	7.956 *(30.117)*	0.630 *(0.383)*	11.07 *(2.181)*	182 *(83.3)*	63 *(17.2)*	75 *(23.6)*	—
196.60 *(146.61)*	2600	12.491 *(47.283)*	0.443 *(0.269)*	15.74 *(3.101)*	190 *(87.8)*	66 *(18.6)*	77 *(25.0)*	—
44.44 *(33.14)*	2785	6.179 *(23.390)*	0.969 *(0.590)*	7.19 *(1.417)*	180 *(81.9)*	64 *(17.5)*	74 *(23.3)*	—
129.95 *(96.89)*	2709	9.716 *(36.779)*	0.521 *(0.317)*	13.37 *(2.634)*	185 *(84.7)*	64 *(17.5)*	75 *(23.9)*	—
Av **104.95** Av ***(78.26)***	**2721**	**8.704** ***(32.949)***	**0.578** ***(0.352)***	**12.06** ***(2.375)***	**184** ***(84.3)***	**64** ***(17.7)***	**75** ***(24.0)***	**28.86** ***(97.46)***

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 11th (4D) Gear											
168.78 *(125.86)*	11571 *(51.47)*	5.47 *(8.80)*	2600	3.56	12.378 *(46.856)*	0.511 *(0.311)*	13.64 *(2.686)*	191 *(88.3)*	61 *(16.1)*	78 *(25.6)*	28.96 *(97.78)*
75% of Pull at Maximum Power — Ten Hours 11th (4D) Gear											
133.56 *(99.60)*	8773 *(39.02)*	5.71 *(9.19)*	2688	2.64	10.752 *(40.699)*	0.561 *(0.341)*	12.42 *(2.447)*	188 *(86.6)*	62 *(16.6)*	72 *(22.1)*	28.95 *(97.74)*
50% of Pull at Maximum Power — Two Hours 11th (4D) Gear											
91.27 *(68.06)*	5850 *(26.02)*	5.85 *(9.42)*	2729	1.69	8.742 *(33.092)*	0.668 *(0.406)*	10.44 *(2.057)*	187 *(86.1)*	61 *(16.1)*	81 *(27.2)*	28.94 *(97.71)*
50% of Pull at Reduced Engine Speed — Two Hours 13th (5O) Gear											
91.30 *(68.08)*	5851 *(26.02)*	5.85 *(9.42)*	1572	2.01	6.081 *(23.021)*	0.464 *(0.282)*	15.01 *(2.957)*	185 *(85.0)*	49 *(9.2)*	56 *(13.3)*	29.05 *(98.10)*
MAXIMUM POWER IN SELECTED GEARS											
142.18 *(106.02)*	22865 *(101.71)*	2.33 *(3.75)*	2661	11.90	3rd (2L) Gear			184 *(84.4)*	46 *(7.8)*	51 *(10.6)*	29.06 *(98.13)*
154.45 *(115.16)*	22326 *(99.31)*	2.59 *(4.17)*	2598	12.34	4th (1O) Gear			185 *(84.7)*	48 *(8.8)*	54 *(12.2)*	29.06 *(98.13)*
163.63 *(122.02)*	20591 *(91.59)*	2.98 *(4.80)*	2597	8.51	5th (2D) Gear			187 *(86.1)*	59 *(15.0)*	65 *(18.3)*	28.97 *(97.83)*
164.65 *(122.78)*	18582 *(82.65)*	3.32 *(5.35)*	2598	6.72	6th (3L) Gear			188 *(86.4)*	60 *(15.6)*	67 *(19.4)*	28.98 *(97.86)*
165.08 *(123.10)*	17019 *(75.70)*	3.64 *(5.85)*	2598	5.84	7th (2O) Gear			188 *(86.7)*	60 *(15.6)*	69 *(20.6)*	28.98 *(97.86)*
168.88 *(125.94)*	15350 *(68.28)*	4.13 *(6.64)*	2600	5.24	8th (3D) Gear			189 *(86.9)*	61 *(16.1)*	71 *(21.7)*	28.99 *(97.89)*
167.74 *(125.09)*	14155 *(62.96)*	4.44 *(7.15)*	2601	4.56	9th (4L) Gear			189 *(87.2)*	61 *(16.1)*	72 *(22.2)*	28.99 *(97.89)*
166.78 *(124.37)*	12640 *(56.22)*	4.95 *(7.96)*	2600	3.79	10th (3O) Gear			189 *(87.2)*	61 *(16.1)*	73 *(22.8)*	28.98 *(97.86)*
170.57 *(127.19)*	11697 *(52.03)*	5.47 *(8.80)*	2599	3.48	11th (4D) Gear			190 *(87.8)*	62 *(16.7)*	76 *(24.4)*	28.98 *(97.86)*
165.95 *(123.75)*	9534 *(42.41)*	6.53 *(10.50)*	2600	2.85	12th (4O) Gear			190 *(87.5)*	61 *(16.1)*	73 *(22.8)*	28.97 *(97.83)*
167.19 *(124.67)*	9449 *(42.03)*	6.64 *(10.68)*	2597	2.77	13th (5L) Gear			190 *(87.8)*	61 *(16.1)*	74 *(23.3)*	28.97 *(97.83)*
167.01 *(124.54)*	7693 *(34.22)*	8.14 *(13.10)*	2599	2.29	14th (5D) Gear			190 *(87.5)*	62 *(16.7)*	75 *(23.9)*	28.98 *(97.86)*

Department of Agricultural Engineering

Dates of Test: April 9 to 15, 1985

Manufacturer: WHITE FARM EQUIPMENT COMPANY, 2625 Butterfield Road, Oakbrook, Illinois 60521

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3(rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8374 **Fuel weight** 6.972 lbs/gal *(0.836 kg/l)* **Oil** White Farm Equipment Company Supreme Motor Oil **SAE** 30 **API service classification** CC-CD-SD-SE-SF **To motor** 7.692 gal *(29.119 l)* **Drained from motor** 7.244 gal *(27.420 l)* **Transmission and final drive lubricant** White Farm Equipment Company Universal Fluid **Total time engine was operated** 35.0 hours.

ENGINE: Make Caterpillar Diesel **Type** eight cylinder vee with turbocharger **Serial No.** 03Z03080 **Crankshaft** lengthwise **Rated rpm** 2600 **Bore and stroke** 4.5" × 5.0" *(114.3 mm × 127 mm)* **Compression ratio** 16.5 to 1 **Displacement** 636 cu in *(10422 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil, radiator for hydraul-shift oil **Fuel filter** one paper cartridge and water seperator **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** two thermostats.

CHASSIS: Type four wheel drive with duals **Serial No.** 302272-427 **Tread width** rear 60" *(1524 mm)* to 126" *(3200 mm)* front 60" *(1524 mm)* to 126" *(3200 mm)* **Wheel base** 117.75" *(2990 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 70.6" *(1793 mm)* Vertical distance above roadway 43.7" *(1110 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (3) range operator controlled powershift **Advertised speeds mph (km/h)** first 2.0 *(3.2)* second 2.5 *(4.0)* third 2.6 *(4.2)* fourth 2.9 *(4.7)* fifth 3.3 *(5.2)* sixth 3.6 *(5.6)* seventh 3.8 *(6.1)* eighth 4.3 *(6.9)* ninth 4.6 *(7.4)* tenth 5.1 *(8.1)* eleventh 5.6 *(9.0)* twelfth 6.6 *(10.6)* thirteenth 6.7 *(10.8)* fourteenth 8.2 *(13.2)* fifteenth 9.7 *(15.6)* sixteenth 11.7 *(18.8)* seventeenth 14.2 *(22.9)* eighteenth 16.9 *(27.2)* reverse 2.3 *(3.8)*, 2.9 *(4.6)*, 3.4 *(5.5)*, 4.1 *(6.6)*, 5.0 *(8.0)*, 5.9 *(9.5)* **Clutch** dual dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically power activated and operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 210" *(5.33 m)* left 210" *(5.33 m)* **Turning space**

LUGGING ABILITY IN 11th (4D) GEAR

Crankshaft Speed rpm	2599	2343	2080	1815	1560	1298
Pull—lbs *(kN)*	11697 *(52.03)*	13245 *(58.92)*	14553 *(64.73)*	15282 *(67.98)*	15879 *(70.63)*	15634 *(69.54)*
Increase in Pull %	0	13	24	31	36	34
Power—Hp *(kW)*	170.57 *(127.19)*	173.13 *(129.10)*	167.88 *(125.19)*	153.24 *(114.27)*	136.47 *(101.76)*	111.83 *(83.40)*
Speed—Mph *(km/h)*	5.47 *(8.80)*	4.90 *(7.89)*	4.33 *(6.96)*	3.76 *(6.05)*	3.22 *(5.19)*	2.68 *(4.32)*
Slip %	3.48	4.02	4.48	4.94	5.24	5.24

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	78.0
75% of Pull at Maximum Power—Ten Hours	78.0
50% of Pull at Maximum Power—Two Hours	78.0
50% of Pull at Reduced Engine Speed—Two Hours	77.5
Bystander in 18th (6O) gear	90.0

TIRES, BALLAST AND WEIGHT		Tested Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 18.4-38; 8, inner 14 *(95)* outer 12 *(83)*
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Front Tires	—No., size, ply & psi *(kPa)*	Four 18.4-38; 8, inner 14 *(95)* outer 12 *(83)*
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Height of Drawbar		14 in *(355 mm)*
Static Weight with Operator	—Rear	9665 lb *(4384 kg)*
	—Front	14475 lb *(6566 kg)*
	—Total	24140 lb *(10950 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2200	*(15170)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	156	*(69)*	
Location	pump inlet		
	Maximum Lift Capacity		*** Lift Capacity for Transport**
QUICK ATTACH	yes		
CATEGORY	III		*not measured
LOAD lbs *(kg)*	6804	*(3086)*	
TIME sec	4.01		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	13.7	*(348)*	
Top of timed range	39.9	*(1014)*	
Highest position	40.0	*(1016)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	12.9	*(328)*	
Top of timed range	45.1	*(1146)*	
Highest position	45.4	*(1153)*	

*Implement load capacity for transport purposes not specified by manufacturer.

diameter (on concrete surface without brake) right 450" *(11.43 m)* left 450" *(11.43 m)* **Power take-off** 1002 rpm at 2600 engine rpm **Unladen tractor mass** 23700 lbs *(10750 kg)*.

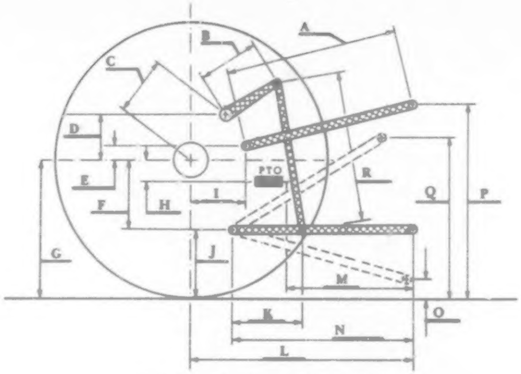
REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 156°F *(69.1°C)*. Twelve gears were chosen between 15% slip and 10 mph *(16.1 km/h)*. During final inspection of the engine, it was found that cylinder No. 2 was damaged due to a chipped oil ring.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1558**, June 19, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	25.4	*645*
B	16.0	*406*
C	20.1	*511*
D	18.6	*472*
E	10.2	*259*
F	9.7	*246*
G	31.3	*795*
H	1.9	*48*
I	9.3	*236*
J	21.6	*549*
K	22.3	*566*
L	45.6	*1158*
L'	50.2	*1275*
M	28.4	*721*
N	39.7	*1008*
O	7.0	*178*
P	45.1	*1146*
Q	40.5	[illegible]
R	40.0	[illegible]

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White Farm Equipment 4-225 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1559—WHITE FARM EQUIPMENT 4-270 DIESEL 16 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —1013 rpm)								
239.25 *(178.41)*	2100	14.480 *(54.812)*	0.422 *(0.257)*	16.52 *(3.255)*	196 *(91.1)*	66 *(19.1)*	75 *(23.8)*	28.96 *(97.80)*
Standard Power Take-off Speed (1000 rpm) — One Hour								
242.30 *(180.68)*	2073	14.516 *(54.950)*	0.418 *(0.254)*	16.69 *(3.288)*	196 *(91.1)*	68 *(19.8)*	76 *(24.3)*	28.99 *(97.89)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
209.28 *(156.06)*	2161	13.140 *(49.742)*	0.438 *(0.266)*	15.93 *(3.138)*	196 *(91.1)*	68 *(20.0)*	76 *(24.2)*	
0.00 *(0.00)*	2286	3.74[illegible] *(14.1[illegible])*			194 *(89.7)*	68 *(19.7)*	75 *(23.6)*	
108.05 *(80.57)*	2231	8.436 *(31.935)*	0.545 *(0.331)*	12.81 *(2.523)*	195 *(90.6)*	67 *(19.4)*	76 *(24.2)*	
240.97 *(179.70)*	2101	14.533 *(55.015)*	0.421 *(0.256)*	16.58 *(3.266)*	196 *(91.1)*	67 *(19.2)*	76 *(24.2)*	
54.56 *(40.68)*	2263	6.213 *(23.520)*	0.795 *(0.483)*	8.78 *(1.730)*	194 *(90.0)*	66 *(18.9)*	75 *(23.9)*	
159.75 *(119.12)*	2199	10.728 *(40.610)*	0.469 *(0.285)*	14.89 *(2.933)*	195 *(90.6)*	66 *(18.9)*	75 *(23.9)*	
Av 128.77 ***Av (96.02)***	**2207**	**9.467** ***(35.836)***	**0.513** ***(0.312)***	**13.60** ***(2.680)***	**195** ***(90.5)***	**67** ***(19.4)***	**75** ***(24.0)***	**28.97** ***(97.82)***

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 9th (3A) Gear											
207.98 *(155.09)*	11794 *(52.46)*	6.61 *(10.64)*	2100	3.00	14.318 *(54.201)*	0.480 *(0.292)*	14.53 *(2.861)*	197 *(91.4)*	60 *(15.6)*	75 *(23.9)*	28.78 *(97.19)*
75% of Pull at Maximum Power — Ten Hours 9th (3A) Gear											
166.02 *(123.80)*	9019 *(40.12)*	6.90 *(11.11)*	2173	2.20	12.273 *(46.459)*	0.516 *(0.314)*	13.53 *(2.665)*	197 *(91.5)*	59 *(15.0)*	75 *(23.8)*	28.93 *(97.69)*
50% of Pull at Maximum Power — Two Hours 9th (3A) Gear											
113.65 *(84.75)*	6013 *(26.75)*	7.09 *(11.41)*	2213	1.48	9.553 *(36.161)*	0.586 *(0.357)*	11.90 *(2.344)*	197 *(91.7)*	62 *(16.7)*	79 *(25.8)*	28.73 *(97.00)*
50% of Pull at Reduced Engine Speed — Two Hours 12th (3D) Gear											
113.62 *(84.73)*	6012 *(26.74)*	7.09 *(11.41)*	1289	1.26	8.112 *(30.709)*	0.498 *(0.303)*	14.01 *(2.759)*	195 *(90.3)*	62 *(16.7)*	81 *(27.2)*	28.72 *(96.98)*
MAXIMUM POWER IN SELECTED GEARS											
180.39 *(134.52)*	27180 *(120.90)*	2.49 *(4.01)*	2135	14.85	3rd (1C) Gear			197 *(91.7)*	58 *(14.4)*	67 *(19.4)*	28.81 *(97.29)*
200.33 *(149.38)*	24164 *(107.48)*	3.11 *(5.00)*	2098	9.09	4th (1D) Gear			197 *(91.7)*	57 *(13.9)*	69 *(20.6)*	28.74 *(97.05)*
203.77 *(151.95)*	22590 *(100.48)*	3.38 *(5.44)*	2099	7.76	5th (2A) Gear			198 *(91.9)*	58 *(14.4)*	70 *(21.1)*	28.74 *(97.05)*
208.08 *(155.16)*	18629 *(82.86)*	4.19 *(6.74)*	2097	5.44	6th (2B) Gear			196 *(91.1)*	60 *(15.6)*	73 *(22.8)*	28.74 *(97.05)*
208.52 *(155.34)*	15456 *(68.75)*	5.05 *(8.13)*	2098	4.24	7th (2C) Gear			196 *(91.1)*	59 *(15.0)*	71 *(21.7)*	28.74 *(97.05)*
207.62 *(154.83)*	12805 *(56.96)*	6.08 *(9.79)*	2099	3.50	8th (2D) Gear			197 *(91.4)*	55 *(12.8)*	63 *(17.2)*	28.74 *(97.05)*
211.70 *(157.86)*	12025 *(53.49)*	6.60 *(10.62)*	2097	3.00	9th (3A) Gear			196 *(91.1)*	60 *(15.6)*	74 *(23.3)*	28.74 *(97.05)*
211.04 *(157.37)*	9849 *(43.81)*	8.04 *(12.93)*	2097	2.50	10th (3B) Gear			195 *(90.8)*	56 *(13.3)*	67 *(19.4)*	28.74 *(97.05)*

Department of Agricultural Engineering

Dates of Test: April 10 to 18, 1985

Manufacturer: WHITE FARM EQUIPMENT COMPANY, 2625 Butterfield Road, Oakbrook, Illinois 60521

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 48.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60/60°F** *(15/15°C)* 0.8380 **Fuel weight** 6.977 lbs/gal *(0.836 kg/l)* **Oil** White Farm Equipment Company Supreme Motor Oil **SAE** 30 **API service classification** CC-CD-SD-SE-SF **To motor** 5.389 gal *(20.400 l)* **Drained from motor** 4.597 gal *(17.403 l)* **Transmission and final drive lubricant** White Farm Equipment Company Universal Fluid **Total time engine was operated** 36.5 hours.

ENGINE: Make Caterpillar Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 64Z02249 **Crankshaft** lengthwise **Rated rpm** 1700 to 2100 **Bore and stroke** 4.75" × 6.00" *(120.7 mm × 152.4 mm)* **Compression ratio** 15.0 to 1 **Displacement** 638 cu in *(10457 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements with aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge and water separator **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type four wheel drive with duals **Serial No.** 302705-432 **Tread width** rear 63" *(1600 mm)* to 132" *(3353 mm)* front 63" *(1600 mm)* to 132" *(3353 mm)* **Wheel base** 129.5" *(3289 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 72.8" *(1850 mm)* Vertical distance above roadway 39.5" *(1003 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Advertised speeds mph** *(km/h)* first 1.9 *(3.1)* second 2.3 *(3.7)* third 2.7 *(4.4)* fourth 3.3 *(5.3)* fifth 3.5 *(5.7)* sixth 4.3 *(6.8)* seventh 5.1 *(8.2)* eighth 6.0 *(9.7)* ninth 6.5 *(10.5)* tenth 7.9 *(12.7)* eleventh 9.4 *(15.2)* twelfth 11.2 *(18.1)* thirteenth 12.0 *(19.4)* fourteenth 14.6 *(23.4)* fifteenth 17.3 *(27.9)* sixteenth 20.7 *(33.3)* reverse 3.0 *(4.9)*, 3.6 *(5.9)*, 4.3 *(7.0)*, 5.2 *(8.3)* **Clutch** multiple wet disc hydraulically power activated by foot pedal **Brakes** multiple wet disc hydraulically power activated and operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 291" *(7.39 m)* left 291" *(7.39 m)* **Turning space diameter** (on concrete surface without brake) right 604" *(15.34 m)* left 604" *(15.34 m)* **Power take-off** 1000 rpm at 2073 engine rpm **Unladen tractor mass** 30215 lbs *(13705 kg)*.

LUGGING ABILITY IN 9th (3A) GEAR

Crankshaft Speed rpm	2097	1888	1672	1466	1247	1046
Pull—lbs *(kN)*	12025 *(53.49)*	14031 *(62.41)*	15062 *(67.00)*	15532 *(69.09)*	15399 *(68.50)*	13873 *(61.71)*
Increase in Pull %	0	17	25	29	28	15
Power—Hp *(kW)*	211.70 *(157.86)*	221.01 *(164.81)*	209.47 *(156.20)*	189.02 *(140.95)*	159.43 *(118.89)*	121.08 *(90.29)*
Speed—Mph *(km/h)*	6.60 *(10.62)*	5.91 *(9.51)*	5.22 *(8.39)*	4.56 *(7.34)*	3.88 *(6.25)*	3.27 *(5.27)*
Slip %	3.00	3.66	3.99	4.16	3.99	3.83

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	79.0
75% of Pull at Maximum Power—Ten Hours	78.5
50% of Pull at Maximum Power—Two Hours	78.5
50% of Pull at Reduced Engine Speed—Two Hours	75.0
Bystander in 15th (4C) gear	90.5

POWER TAKE-OFF PERFORMANCE at 1900 RPM

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —916 rpm)								
251.54 *(187.57)*	1900	14.420 *(54.587)*	0.400 *(0.243)*	17.44 *(3.437)*	196 *(91.2)*	68 *(20.0)*	76 *(24.5)*	28.95 *(97.68)*

POWER TAKE-OFF PERFORMANCE at 1700 RPM

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —820 rpm)								
241.00 *(179.72)*	1701	13.606 *(51.505)*	0.394 *(0.240)*	17.71 *(3.490)*	197 *(91.7)*	66 *(19.1)*	76 *(24.6)*	28.94 *(97.73)*

TIRES, BALLAST AND WEIGHT		Tested Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Four 20.8-38, 8, inner 14 *(97)* outer 12 *(83)*
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Front Tires	—No., size, ply & psi *(kPa)*	Four 20.8-38, 8, inner 14 *(97)* outer 12 *(83)*
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Height of Drawbar		14 in *(355 mm)*
Static Weight with Operator	—Rear	13415 lb *(6085 kg)*
	—Front	17235 lb *(7818 kg)*
	—Total	30650 lb *(13903 kg)*

REPAIRS AND ADJUSTMENTS: During the preliminary PTO test a leak developed in the PTO carrier bearing lubricator tube. This tube was replaced and test continued.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 135°F *(57.2°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is as true and correct report of official Tractor Test No. **1559**, June 19, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

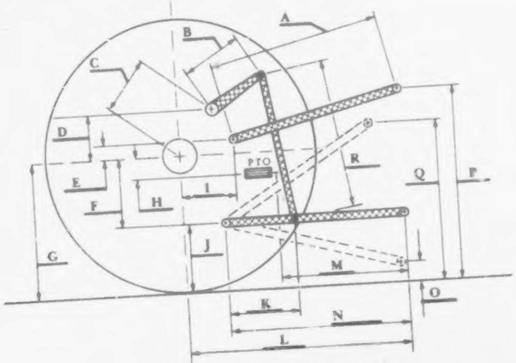
K. VON BARGEN
L. L. BASHFORD
T. L. THOMPSON
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2275	*(15690)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	166	*(74)*	
Location	pump inlet		

	Maximum Lift Capacity		Lift Capacity for Transport
QUICK ATTACH	yes		*not measured
CATEGORY	III		
LOAD lbs *(kg)*	12504	*(5672)*	
TIME sec	5.35		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	10.7	*(272)*	
Top of timed range	36.7	*(932)*	
Highest position	40.2	*(1021)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.8	*(300)*	
Top of timed range	36.5	*(927)*	
Highest position	40.3	*(1024)*	

*Implement load capacity for transport purposes not specified by manufacturer.



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	29.8	*756*
B	23.8	*605*
C	19.8	*503*
D	18.3	*465*
E	14.0	*356*
F	10.1	*257*
G	33.2	*843*
H	3.0	*76*
I	19.8	*503*
J	23.1	*587*
K	24.5	*622*
L	48.4	*1229*
L'	53.0	*1346*
M	29.0	*737*
N	42.5	*1080*
O	8.0	*203*
P	46.6	*1184*
Q	40.6	*1032*
R	40.9	*1038*

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White Farm Equipment 4-270 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1571—ZETOR 5245 DIESEL
ALSO ZETOR 5211 DIESEL
10 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed —596 rpm)								
42.51 *(31.70)*	2200	2.650 *(10.032)*	0.437 *(0.266)*	16.04 *(3.160)*	181 *(83.0)*	66 *(18.7)*	75 *(23.8)*	29.13 *(98.36)*
Standard Power Take-off Speed (540 rpm) — One Hour								
40.10 *(29.90)*	1994	2.421 *(9.165)*	0.423 *(0.258)*	16.56 *(3.262)*	181 *(82.8)*	66 *(18.7)*	75 *(23.6)*	29.13 *(98.37)*
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
37.44 *(27.92)*	2281	2.374 *(8.987)*	0.445 *(0.270)*	15.77 *(3.107)*	177 *(80.3)*	66 *(18.6)*	75 *(23.6)*	
0.00 *(0.00)*	2418	0.851 *(3.222)*			173 *(78.3)*	65 *(18.3)*	74 *(23.3)*	
19.32 *(14.40)*	2351	1.527 *(5.781)*	0.554 *(0.337)*	12.65 *(2.492)*	175 *(79.4)*	65 *(18.3)*	74 *(23.1)*	
42.77 *(31.89)*	2200	2.644 *(10.007)*	0.433 *(0.264)*	16.18 *(3.187)*	180 *(82.2)*	65 *(18.3)*	75 *(23.9)*	
9.80 *(7.31)*	2386	1.189 *(4.502)*	0.851 *(0.518)*	8.24 *(1.624)*	174 *(78.6)*	65 *(18.3)*	76 *(24.2)*	
28.67 *(21.38)*	2328	1.951 *(7.384)*	0.477 *(0.290)*	14.70 *(2.895)*	176 *(79.7)*	65 *(18.3)*	75 *(23.9)*	
Av 23.12 **Av** ***(17.24)***	**2327**	**1.756** ***(6.647)***	**0.533** ***(0.324)***	**13.17** ***(2.594)***	**176** ***(79.8)***	**65** ***(18.4)***	**75** ***(23.7)***	**29.14** ***(98.41)***

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (3H) Gear											
37.96 *(28.30)*	2460 *(10.94)*	5.79 *(9.31)*	2202	3.91	2.602 *(9.851)*	0.481 *(0.292)*	14.59 *(2.873)*	185 *(85.0)*	75 *(23.6)*	82 *(27.5)*	28.76 *(97.12)*
75% of Pull at Maximum Power — Ten Hours 8th (3H) Gear											
30.20 *(22.52)*	1860 *(8.27)*	6.09 *(9.80)*	2289	2.72	2.183 *(8.264)*	0.507 *(0.308)*	13.83 *(2.725)*	181 *(82.7)*	72 *(22.3)*	82 *(27.9)*	29.03 *(98.04)*
50% of Pull at Maximum Power — Two Hours 8th (3H) Gear											
20.79 *(15.50)*	1240 *(5.52)*	6.29 *(10.12)*	2343	1.88	1.718 *(6.504)*	0.580 *(0.353)*	12.10 *(2.383)*	178 *(81.1)*	69 *(20.6)*	82 *(27.5)*	29.14 *(98.40)*
50% of Pull at Reduced Engine Speed — Two Hours 9th (4H) Gear											
20.77 *(15.49)*	1240 *(5.52)*	6.28 *(10.11)*	1524	1.78	1.426 *(5.398)*	0.481 *(0.293)*	14.57 *(2.870)*	179 *(81.7)*	70 *(21.1)*	83 *(28.3)*	29.13 *(98.35)*
MAXIMUM POWER IN SELECTED GEARS											
30.56 *(22.79)*	5955 *(26.49)*	1.92 *(3.10)*	2279	14.80	4th (4L) Gear			179 *(81.7)*	68 *(20.0)*	72 *(22.2)*	28.93 *(97.69)*
36.33 *(27.09)*	5270 *(23.44)*	2.59 *(4.16)*	2200	10.82	5th (1H) Gear			183 *(83.9)*	69 *(20.6)*	74 *(23.3)*	28.92 *(97.66)*
37.21 *(27.75)*	4136 *(18.40)*	3.37 *(5.43)*	2198	7.26	6th (5L) Gear			183 *(83.9)*	70 *(21.1)*	75 *(23.9)*	28.92 *(97.66)*
38.13 *(28.43)*	3519 *(15.65)*	4.06 *(6.54)*	2200	5.77	7th (2H) Gear			184 *(84.4)*	70 *(21.1)*	77 *(25.0)*	28.91 *(97.62)*
38.44 *(28.66)*	2491 *(11.08)*	5.79 *(9.31)*	2201	3.91	8th (3H) Gear			187 *(86.1)*	75 *(23.9)*	83 *(28.3)*	28.76 *(97.12)*
36.96 *(27.56)*	1539 *(6.84)*	9.01 *(14.50)*	2201	2.45	9th (4H) Gear			183 *(83.6)*	72 *(22.2)*	79 *(26.1)*	28.90 *(97.59)*

Department of Agricultural Engineering

Dates of Test: August 22 to September 5, 1985

Manufacturer: AGROZET ZETOR, Brno 63200, Czechoslovakia

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8423 **Fuel weight** 7.013 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 2.280 gal *(8.629 l)* **Drained from motor** 2.017 gal *(7.636 l)* **Transmission and final drive lubricant** SAE 80W gear lubricant **Total time engine was operated** 53.5 hours

ENGINE: Make Zetor Diesel **Type** three cylinder vertical **Serial No.** 5201 005290 K **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.02" × 4.33" *(102 mm × 110 mm)* **Compression ratio** 17 to 1 **Displacement** 164.6 cu in *(2696 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** oil bath with centrifugal precleaner **Air compressor** direct engine drive **Oil filter** two metal sieve elements **Fuel filter** two paper elements and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 5245 005787 **Tread width** rear 56.1" *(1425 mm)* to 70.9 *(1800 mm)* front 59.4" *(1510 mm)* **Wheel base** 84.3" *(2140 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 34.2" *(869 mm)* Vertical distance above roadway 34.6" *(879 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive with throw out lever **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 0.7 *(1.1)* second 1.0 *(1.7)* third 1.4 *(2.3)* fourth 2.2 *(3.6)* fifth 2.9 *(4.7)* sixth 3.7 *(6.0)* seventh 4.4 *(7.1)* eighth 6.1 *(9.8)* ninth 9.4 *(15.1)* tenth 15.7 *(25.3)* reverse 0.9 *(1.5)*, 3.8 *(6.2)* **Clutch** single dry disc operated by foot pedal **Brakes** drum and shoe hydraulically operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 161" *(4.1 m)* left 161" *(4.1 m)*(on concrete surface without brake) right 181" *(4.6 m)* left 181" *(4.6 m)* **Turning space diameter** (on concrete surface with brake applied) right 335" *(8.5 m)* left 335" *(8.5 m)*(on concrete surface without brake) right 378" *(9.6 m)* left 378" *(9.6 m)* **Power take-off** 540 rpm at 1994 engine rpm and 1000 rpm at 2050 engine rpm **Unladen tractor mass** 6735 lb *(3055 kg)*.

LUGGING ABILITY IN 8th (3H) GEAR

Crankshaft Speed rpm	2201	1975	1759	1544	1318	1103
Pull—lbs *(kN)*	2491 *(11.08)*	2579 *(11.47)*	2650 *(11.79)*	2697 *(12.00)*	2670 *(11.88)*	2526 *(11.24)*
Increase in Pull %	0	4	6	8	7	1
Power—Hp *(kW)*	38.44 *(28.66)*	35.61 *(26.56)*	32.55 *(24.27)*	29.04 *(21.66)*	24.55 *(18.31)*	19.49 *(14.53)*
Speed—Mph *(km/h)*	5.79 *(9.31)*	5.18 *(8.33)*	4.61 *(7.41)*	4.04 *(6.50)*	3.45 *(5.55)*	2.89 *(4.66)*
Slip %	3.91	4.11	4.11	4.24	4.24	3.98

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Engaged dB(A)
Maximum Available Power—Two Hours	83.5	83.0
75% of Pull at Maximum Power—Ten Hours		83.0
50% of Pull at Maximum Power—Two Hours		83.0
50% of Pull at Reduced Engine Speed—Two Hours		80.5
Bystander in 10th (5H) gear	86.0	

DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption			Temp °F (°C)			
					gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg *(kPa)*
Maximum Available Power — Two Hours 8th (3H) Gear											
37.43 *(27.91)*	2459 *(10.94)*	5.71 *(9.19)*	2202	5.74	2.595 *(9.824)*	0.486 *(0.296)*	14.42 *(2.841)*	187 *(86.1)*	75 *(23.9)*	85 *(29.2)*	28.74 *(97.03)*
MAXIMUM POWER IN SELECTED GEARS											
31.31 *(23.34)*	4558 *(20.27)*	2.58 *(4.15)*	2279	14.89	5th (1H) Gear			179 *(81.4)*	68 *(20.0)*	73 *(22.8)*	28.92 *(97.66)*
37.27 *(27.79)*	3550 *(15.79)*	3.94 *(6.34)*	2200	9.39	7th (2H) Gear			184 *(84.2)*	71 *(21.7)*	78 *(25.6)*	28.91 *(97.62)*
37.83 *(28.21)*	2488 *(11.97)*	5.70 *(9.18)*	2202	5.93	8th (3H) Gear			183 *(83.9)*	71 *(21.7)*	79 *(26.1)*	28.91 *(97.62)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 16.9/14-28; 8; 24 *(165)*	Two 16.9/14-28; 8; 24 *(165)*
Ballast	—Liquid (each)	None	None
	—Test equip. (each)	100 lb *(45 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 9.5/9-24; 8; 28 *(195)*	Two 9.5/9-24; 8; 28 *(195)*
Ballast	—Liquid (each)	None	None
	—Test equip. (each)	92 lb *(42 kg)*	None
Height of Drawbar		23.5 in *(595 mm)*	23.5 in *(595 mm)*
Static Weight with Operator	—Rear	4355 lb *(1975 kg)*	4155 lb *(1885 kg)*
	—Front	2940 lb *(1334 kg)*	2755 lb *(1250 kg)*
	—Total	7295 lb *(3309 kg)*	6910 lb *(3135 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2425	*(16720)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	173	*(78)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	3300	*(1497)*	
TIME sec	2.35		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.1	*(307)*	
Top of timed range	36.1	*(917)*	
Highest position	36.1	*(917)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.8	*(300)*	
Top of timed range	38.3	*(973)*	
Highest position	38.3	*(973)*	

*Implement load capacity for transport purposes not specified by manufacturer

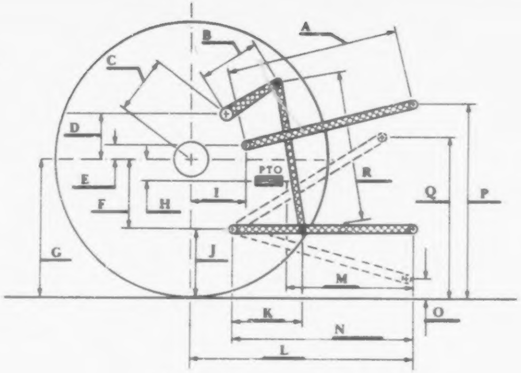
REPAIRS AND ADJUSTMENTS: During preliminary PTO tests, it was necessary to replace the washer in the crankcase oil filter base.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 136°F *(57.9°C)*. Six gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1571**, October 25, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	*mm*
A	25.5	*648*
B	12.6	*320*
C	14.3	*364*
D	14.3	*363*
E	12.7	*323*
F	5.4	*138*
G	26.7	*678*
H	0.3	*7*
I	11.3	*288*
J	21.3	*540*
K	15.8	*401*
L	37.0	*940*
M	26.7	*677*
N	33.8	*857*
O	8.0	*203*
P	40.3	*1024*
Q	35.4	*899*
R	20.5	*521*

Zetor 5245 Diesel

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
Irvin T. Omtvedt, Dean and Director

NEBRASKA TRACTOR TEST 1572—ZETOR 7245 DIESEL
ALSO ZETOR 7211 DIESEL
10 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed — Two hours (PTO Speed—596 rpm)								
58.28 (43.46)	2200	3.603 (13.637)	0.434 (0.264)	16.18 (3.187)	180 (81.9)	66 (18.8)	75 (23.8)	29.14 (98.40)
Standard Power Take-off Speed (540 rpm) — One Hour								
54.91 (40.95)	1995	3.265 (12.361)	0.417 (0.254)	16.82 (3.313)	179 (81.9)	66 (18.8)	75 (23.8)	29.14 (98.40)
VARYING POWER AND FUEL CONSUMPTION — Two Hours								
51.41 (38.34)	2283	3.148 (11.918)	0.429 (0.261)	16.33 (3.217)	177 (80.3)	66 (18.9)	75 (23.6)	
0.00 (0.00)	2425	1.057 (4.000)			173 (78.3)	66 (18.9)	76 (24.2)	
26.65 (19.88)	2368	2.058 (7.789)	0.541 (0.329)	12.95 (2.552)	175 (79.4)	65 (18.3)	75 (23.6)	
58.54 (43.65)	2200	3.615 (13.683)	0.433 (0.263)	16.19 (3.190)	180 (82.2)	66 (18.6)	75 (23.9)	
13.48 (10.05)	2394	1.454 (5.506)	0.757 (0.460)	9.27 (1.825)	173 (78.1)	67 (19.2)	76 (24.4)	
39.26 (29.27)	2324	2.682 (10.153)	0.479 (0.291)	14.64 (2.883)	175 (79.2)	66 (18.9)	75 (23.9)	
Av 31.56 **Av (23.53)**	**2332**	**2.336** **(8.841)**	**0.519** **(0.316)**	**13.51** **(2.661)**	**175** **(79.6)**	**66** **(18.8)**	**75** **(23.9)**	**29.12** **(98.32)**

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2H) Gear											
51.28 (38.24)	3233 (14.38)	5.95 (9.57)	2201	5.06	3.572 (13.521)	0.489 (0.297)	14.36 (2.828)	183 (83.9)	74 (23.3)	81 (26.9)	28.98 (97.86)
75% of Pull at Maximum Power — Ten Hours 7th (2H) Gear											
41.67 (31.07)	2483 (11.04)	6.29 (10.13)	2296	3.76	2.997 (11.346)	0.504 (0.307)	13.90 (2.738)	182 (83.3)	72 (22.3)	85 (29.3)	28.74 (97.05)
50% of Pull at Maximum Power — Two Hours 7th (2H) Gear											
28.66 (21.37)	1650 (7.34)	6.51 (10.48)	2347	2.56	2.324 (8.798)	0.569 (0.346)	12.33 (2.429)	180 (81.9)	76 (24.2)	89 (31.4)	28.90 (97.59)
50% of Pull at Reduced Engine Speed — Two Hours 9th (3H) Gear											
28.67 (21.38)	1650 (7.34)	6.52 (10.49)	1685	2.52	1.996 (7.557)	0.488 (0.297)	14.36 (2.829)	179 (81.7)	75 (23.6)	84 (28.9)	28.96 (97.78)
MAXIMUM POWER IN SELECTED GEARS											
43.54 (32.47)	6356 (28.27)	2.57 (4.13)	2267	14.95		4th (4L) Gear		180 (81.9)	69 (20.6)	72 (22.2)	28.76 (97.12)
50.21 (37.44)	5158 (22.94)	3.65 (5.87)	2202	9.34		5th (5L) Gear		182 (83.1)	68 (20.0)	70 (21.1)	28.94 (97.73)
52.10 (38.85)	4372 (19.45)	4.47 (7.19)	2200	7.10		6th (1H) Gear		181 (82.8)	69 (20.6)	71 (21.7)	28.94 (97.73)
52.52 (39.16)	3311 (14.73)	5.95 (9.57)	2203	5.17		7th (2H) Gear		182 (83.1)	71 (21.7)	75 (23.9)	28.96 (97.79)
51.78 (38.61)	2306 (10.26)	8.42 (13.55)	2199	3.52		8th (3H) Gear		182 (83.3)	72 (22.2)	77 (25.0)	28.96 (97.79)

Department of Agricultural Engineering

Dates of Test: August 23 to September 6, 1985

Manufacturer: AGROZET ZETOR, Brno 63200, Czechoslovakia

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.9 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.8423 **Fuel weight** 7.013 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W-40 **API service classification** SE, SF, CC, CD **To motor** 2.841 gal *(10.753 l)* **Drained from motor** 2.567 gal *(9.716 l)* **Transmission and final drive lubricant** SAE 80W gear lubricant **Total time engine was operated** 51.5 hours

ENGINE: Make Zetor Diesel **Type** four cylinder vertical **Serial No.** 7201 008344 K **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.02" × 4.33" *(102 mm × 110 mm)* **Compression ratio** 17 to 1 **Displacement** 219 cu in *(3596 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** oil bath with centrifugal precleaner **Air compressor** direct engine drive **Oil filter** full flow centrifugal **Fuel filter** two paper elements and sediment bowl **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type front wheel assist **Serial No.** 7245 006440 **Tread width** rear 56.1" *(1425 mm)* to 70.9" *(1800 mm)* front 59.4" *(1510 mm)* to 70.3" *(1785 mm)* **Wheel base** 87.5" *(2222 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 35.9" *(911 mm)* Vertical distance above roadway 37.0" *(940 mm)* Horizontal distance from center of rear wheel tread 0" *(0 mm)* to the right/left **Hydraulic control system** direct engine drive with throwout lever **Transmission** selective gear fixed ratio **Advertised speeds mph (km/h)** first 1.2 *(1.9)* second 1.5 *(2.4)* third 2.1 *(3.4)* fourth 3.0 *(4.8)* fifth 4.1 *(6.6)* sixth 4.9 *(7.9)* seventh 6.4 *(10.3)* eighth 9.0 *(14.4)* ninth 12.8 *(20.5)* tenth 17.5 *(28.1)* reverse 1.6 *(2.5)*, 6.6 *(10.6)* **Clutch** single dry disc operated by foot pedal **Brakes** drum and shoe hydraulically operated by two foot pedals which can be locked together **Steering** power assist **Turning radius** (on concrete surface with brake applied) right 165" *(4.2 m)* left 165" *(4.2 m)*(on concrete surface without brake) right 185" *(4.7 m)* left 185" *(4.7 m)* **Turning space diameter** (on concrete surface with brake applied) right 343" *(8.7 m)* left 343" *(8.7 m)*(on concrete surface without brake) right 390" *(9.9 m)* left 390" *(9.9 m)* **Power take-off** 540 rpm at 1995 engine rpm and 1000 rpm at 2050 engine rpm **Unladen tractor mass** 7660 lb *(3475 kg)*.

LUGGING ABILITY IN 7th (2H) GEAR

Crankshaft Speed rpm	2203	1981	1763	1541	1324	1104
Pull—lbs (kN)	3311 (14.73)	3428 (15.25)	3524 (15.68)	3558 (15.83)	3517 (15.64)	3349 (14.90)
Increase in Pull %	0	4	6	7	6	1
Power—Hp (kW)	52.52 (39.16)	48.80 (36.39)	44.57 (33.24)	39.32 (29.32)	33.46 (24.95)	26.57 (19.82)
Speed—Mph (km/h)	5.95 (9.57)	5.34 (8.59)	4.74 (7.63)	4.14 (6.67)	3.57 (5.74)	2.98 (4.79)
Slip %	5.17	5.31	5.45	5.45	5.45	5.31

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
Maximum Available Power—Two Hours	83.0	84.0
75% of Pull at Maximum Power—Ten Hours		83.0
50% of Pull at Maximum Power—Two Hours		83.0
50% of Pull at Reduced Engine Speed—Two Hours		80.0
Bystander in 10th (5H) gear	87.5	

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp hr (kg/kW h)	Hp hr/gal (kW h/l)	Temp °F (°C) Cooling med	Air wet bulb	Air dry bulb	Barom inch Hg (kPa)
Maximum Available Power — Two Hours 7th (2H) Gear											
49.66 (37.04)	3236 (14.39)	5.76 (9.26)	2201	8.61	3.558 (13.467)	0.502 (0.306)	13.96 (2.750)	185 (85.0)	72 (22.2)	82 (27.5)	28.68 (96.83)
MAXIMUM POWER IN SELECTED GEARS											
45.11 (33.64)	4788 (21.30)	3.53 (5.69)	2259	14.91		5th (5L) Gear		181 (82.5)	69 (20.6)	77 (25.0)	28.65 (96.75)
50.77 (37.86)	3311 (14.73)	5.75 (9.25)	2200	8.68		7th (2H) Gear		181 (82.8)	71 (21.7)	74 (23.3)	28.95 (97.76)

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 16.9-14-34, 8, 24 *(165)*	Two 16.9-14-34, 8, 24 *(165)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	310 lb *(141 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 12.4-11-24, 6, 22 *(150)*	Two 12.4-11-24, 6, 22 *(150)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	52 lb *(24 kg)*	None
Height of Drawbar		27 in *(685 mm)*	27 in *(685 mm)*
Static Weight with Operator	—Rear	5295 lb *(2402 kg)*	4675 lb *(2120 kg)*
	—Front	3270 lb *(1483 kg)*	3165 lb *(1436 kg)*
	—Total	8565 lb *(3885 kg)*	7840 lb *(3556 kg)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi *(kPa)*	2425	*(16720)*	
Location	remote outlet		
Hydraulic oil temperature °F *(°C)*	193	*(89)*	
Location	pump inlet		
	Maximum Lift Capacity		**Lift Capacity for Transport**
QUICK ATTACH	no		
CATEGORY	II		*not measured
LOAD lbs *(kg)*	4698	*(2131)*	
TIME sec	3.51		
HITCH POINT MOVEMENT in *(mm)*			
Lowest position	12.1	*(307)*	
Top of timed range	36.1	*(917)*	
Highest position	36.8	*(935)*	
LOAD CG MOVEMENT in *(mm)*			
Lowest position	11.3	*(287)*	
Top of timed range	36.7	*(932)*	
Highest position	37.7	*(958)*	

*Implement load capacity for transport purposes not specified by manufacturer

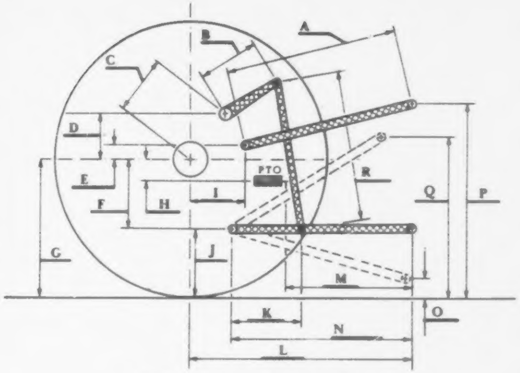
REPAIRS AND ADJUSTMENTS: An "O" ring in the power steering pump was replaced following the 10 hour drawbar test.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 152°F *(66.7°C)*. Five gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1572**, October 25, 1985.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	25.5	*648*
B	12.6	*320*
C	14.3	*364*
D	14.3	*363*
E	12.7	*323*
F	5.4	*138*
G	29.7	*754*
H	0.3	*7*
I	11.3	*288*
J	24.3	*616*
K	15.8	*401*
L	37.0	*940*
M	26.7	*677*
N	33.8	*857*
O	8.0	*203*
P	43.3	*1100*
Q	35.8	*908*
R	21.8	*552*

Zetor 7245 Diesel

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